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THE PLACE OF PREVENTIVE MEDICINE IN THE MEDICAL SCHOOL*

W. S. LEATHERS, M.D.

Professor of Preventive Medicine and Public Health, Vanderbilt University Medical Department

NASHVILLE, TENN.

It has almost become a truism that during the last two decades the standards of medical education have been tremendously improved and the endowments of schools of medicine enormously increased. The amazing advancement in the methods of training the undergraduate student in medicine easily surpasses that of any other phase of educational endeavor. This means that better equipment is provided for laboratory teaching, that the personnel of medical faculties has been enlarged and as a whole improved in quality, and that more adequate and superior hospital facilities have been provided for clinical instruction. It is, however, manifest that insufficient emphasis has been placed on teaching the prevention and control of disease. Moreover, it has become increasingly evident to leaders of medical thought that the preventive aspects of medicine have not been sufficiently stressed in the medical curriculum as a whole, and I think it is also generally agreed that if this end is attained, the attitude of mind of the personnel of medical faculties, certainly in the main, must be changed to meet the newer conception.

In the inspiring and constructive book by Dr. Flexner on "Medical Education" he says: "With the rapid scientific advance in bacteriology, the outlook and spirit of the medical school have already been perceptibly modified; prevention—both socially and individually viewed—is coming to figure more largely in the student's training and in the practitioner's activities. Nor will the challenge of the humanitarian bearing be without its effect even upon the imagination of the investigator. Faculties of public health have, to be sure, also been established; but this does not mean that prevention becomes their business, while cure remains the concern of the physician. On the contrary, within the medical faculty itself, it has become increasingly impracticable to study the diagnosis and cure of disease without consideration of its eradication and prevention." This lucid and effective statement expresses in unmistakable terms the intrinsic importance of public health as a constituent subject of the curriculum and the trend toward teaching the ideas of prevention in the basic sciences as well as in the clinical branches.

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NEED FOR TRAINING IN PUBLIC HEALTH WORK

Although there has been marvelous advancement during this generation in the application of scientific knowledge in reducing the death rate and in prolonging the span of human life by perhaps an average of fifteen years, health authorities, too, have come to realize that the next step needed in strengthening the health forces in this country is to make the instruction in medical schools more preventive in purpose. If one may judge by present-day tendencies, the physician of the future will face a new type of practice. He must become increasingly the family adviser in hygiene and preventive medicine, and also participate in a more concrete way in organized community health service. In a memorable address on "Medicine and the Evolution of Society," delivered during the dedication exercises of the School of Medicine and Dentistry of the University of Rochester, Dr. John C. Merriam,[1] president of the Carnegie Institution of Washington, says: "It is not to be assumed that medicine unaided can prepare the way for continuing growth or evolution of the human group. In such a work the activity described as medicine will represent concentrated effort of many correlated fields. Chemistry, physics, biology and the anthropological and social sciences would all participate. It may be that the medicine of tomorrow will be so different from what is practiced today that in the language of the present it would be more readily described under designation of the sciences from which it will be composed."

It is evident that the profound social changes going on at this time in shaping medical practice will require the most intelligent and unselfish leadership on the part of the medical profession. Notwithstanding the readjustments with which the profession may be confronted, one fact seems to stand out more clearly than others, and that is, the physician of the future should not only be in sympathy with the modern health movement but should also be the most potent influence in the community for the general promotion of public health. It would therefore appear that the medical school cannot make a better contribution to civilization than to train the student so that he may more clearly visualize his responsibility as a physician in the control of disease and in the betterment of individual and community health.

There is another phase of the question which merits repeated emphasis. If the progress of public health work continues at the same rate as it has during the last fifteen years, it will prove extremely difficult to supply the demand which is being made for a trained personnel. There is now a constant need for able graduates of medicine with special training in public health

1. Merriam, J. C.: Science, Dec. 24, 1926.

work to fill positions of exacting responsibility in local, state and national health services. Likewise, better trained public health nurses and inspectors are needed. In a recent paper on "The Trend of Preventive Medicine in the United States," Dr. John A. Ferrell of the International Health Board predicts that more than 7,000 full-time health officials, an equal number of sanitary inspectors, and twice the number of public health nurses, or a total of from 25,000 to 30,000 trained persons, will probably be needed within the next twenty years. Looking toward meeting this demand, two great schools of hygiene and public health, offering avenues and opportunities for highly specialized training in every phase of public health work, have been established at Johns Hopkins and Harvard universities within the last few years. These schools have large endowments, a highly trained personnel for teaching and research, and excellent equipment, and they are in the environment of great scientific centers of learning. The attendance of students at these institutions in the future will, in my opinion, be determined very largely by the interest in public health work which is created among medical students while they are taking the undergraduate courses in medicine. It is true that at the present time neither of the schools mentioned has the quota of promising medical graduates, looking to public health as a career, that should be in attendance. If the demands of public health work are to be effectively supplied, it is desirable that from 5 to 10 per cent of the young graduates in medicine be absorbed in the field of public health as a specialty worthy of their best efforts. With the stabilization of public health administration, the continued improvement in financial remuneration, and the unlimited opportunities for service, it appears that these conditions offer advantages better than those of the average position in private practice. For this reason, among others, I am convinced that the contact between a department of preventive medicine and public health and the medical school, as well as the relation it may sustain to the university at large, will prove indispensable in providing the much needed personnel for specialized health service.

ORGANIZATION OF A PUBLIC HEALTH CURRICULUM

This discussion could be extended to stress further the importance of preventive medicine in the curriculum, but now I wish to refer more specifically to preventive medicine and public health as a major subject or department in the medical school. At the very outset, I would state that I do not favor the so-called lecture course in hygiene and public health which in the past has been the usual practice in the majority of schools—a didactic course chiefly dealing with the laws and regulations for the correction of nuisances and the enforcement of quarantine, with some consideration of communicable diseases, water supplies and sewage disposal. Not that lectures should not be given, but I am of the opinion that the regular instruction in this subject cannot be done effectively without bringing the student into more intimate contact with the practical problems of public health organization and administrative practice, including the application of the principles of epidemiology and immunology in the control of disease. The teaching of this subject must pass from the realm of theory into the field of practice. The difficulty in the past has been that the work has been largely didactic, ill advised, uninteresting and too limited in scope. A continuation of this practice will scarcely prove of value in redirecting the interest of the student.

If the ideals that are being enunciated with reference to the training of medical students are in a large measure realized, it is certainly imperative that we become divorced from the medieval ideas expressed by Billroth in his otherwise admirable book on "The Medical Sciences in the German Universities," in which he treats of public health in general and its place in the medical school in particular. He says, "The fanatical champions of public health are fighting for a goal that is too high for my myopic vision. I can admire the struggle but I cannot become interested in it," and he adds, "Nevertheless I must concede the justice of the demand that we should strive for the best results that can be achieved under our unalterable social conditions." These statements are of peculiar interest because they were made on the very eve of the unprecedented discoveries of Pasteur, Koch and Lister, and therefore can be correctly interpreted only in the light of the revelations of medical science during the last fifty years. Our great need today is a hyperopic rather than a myopic vision.

This leads me to state that there should be in every medical school administered chiefly by an all-time personnel, a department of preventive medicine and public health maintaining university standards in scope and in ideals. The organization of the department should be adequate not only for properly relating its work to the medical curriculum but also for affording opportunity in graduate and postgraduate study, for its scientific and professional status in the medical school will inevitably be weighed in comparison with the standards and development of the much older sciences of anatomy, physiology, pathology and others of the fundamental science group. This comparison will be drawn to an even greater extent with the well established, more inviting and traditionally more popular subjects in clinical medicine. Added to this is the fact that in the field of clinical medicine the immediate outlook guarantees for the student a larger degree of independence and a remuneration more nearly commensurate with the service rendered. Because of these conditions and others, it is much more difficult at present to gain the attention and maintain the consistent and sympathetic interest of the medical student in the hygienic and preventive aspects of medicine than in other branches of the curriculum. This is particularly true in comparison with clinical subjects. To offset this difficulty, the place of preventive medicine in the medical school should be more definitely established, the regular and elective courses better defined, proper correlation effected with clinical teaching, and its work integrated with the health service of the entire university. In a word, it must command the interest and confidence alike of both students and faculty. If I can rely on my observation and experience, I feel very sure that any plan of teaching the principles of hygiene and public health will prove disappointing in an effort to permeate the curriculum with the spirit and methods of preventive medicine, unless headed up in a well administered and efficient department with adequate personnel and equipment for teaching and research. In turn, the orientation and correlation of the subjects in the curriculum so as to give it a preventive trend in the scientific application of prevention can be permanently achieved only through the administrative direction and vitalizing influence of such a department.

The association of American Medical Colleges has specified that the time allowed preventive medicine and public health in the curriculum should be from 3 to

4 per cent of the total hours required. On the basis of a 4,000 hour curriculum, the minimum and maximum time would be from 120 to 160 hours. It is clear, I think, that it is not necessary to increase this time to give the regular course in this subject, but that such realinements should be made as will give added emphasis or altered proportion to the idea of preventive medicine throughout the curriculum, and also will afford opportunity for elective work, as is done in other subjects, for students who may feel that they could take such courses with profit.

PLAN OF INSTRUCTION AT VANDERBILT UNIVERSITY

In the further discussion of this subject, I thought it would be of interest and possibly of suggestive value to give in some detail what is at present being done at Vanderbilt University in teaching preventive medicine and public health to medical students, and also to review briefly the plan that is being followed for more definitely relating the department to the medical school, as well as to the university as a whole. Regular courses of instruction are at present being offered to undergraduate students of medicine, and undergraduate and public health nurses. Instruction is also being effectively coordinated with the state and city departments of health, including health agencies in the immediate vicinity. The factors involved in developing a scheme of instruction in preventive medicine and public health adapted to medical students are:

1. A regular course of instruction, preferably during the fourth year, consisting of lectures and field demonstrations, with the laboratory exercises involved in teaching the application of principles of epidemiology in the prevention and control of disease.
2. The coordination of this course with activities of official health agencies carried on in the community and surrounding territory.
3. Special correlation of instruction in the department of preventive medicine and public health with the course in bacteriology.
4. Coordination of the work of the department with a limited number of clinics on infectious, dietary and occupational diseases in the department of medicine.
5. Cooperation of the departments of the medical school in teaching the principles of preventive medicine throughout the medical curriculum.
6. Assignment of special problems in public health to students for study in the community. The reports, when deemed desirable, are discussed in class conference.
7. Making a sanitary survey of a definite area in the community, or of a small town or city.

The regular course for fourth year medical students consists of forty-four lectures and recitations and sixty-six hours of laboratory work and field demonstrations, a total of 110 hours. The discussions in the class consist of a rather comprehensive consideration of the etiology, modes of transmission, and methods of prevention and control of communicable diseases. Deficiency diseases are likewise emphasized, and some attention is given to occupational hazards, including the etiology, symptomatology, diagnosis and prevention of plumbism. The discussion of the diagnosis and treatment of disease is given only with specific reference to control measures. The subject matter of the course is presented with a view to making it of definite value to the medical student as a prospective practitioner of medicine.

The field demonstrations for medical students are made possible through cooperation and coordination with the state and local health agencies. These demonstrations require a study of the state department and its bureaus, the municipal health service, and constituent activities, such as prenatal and well-baby clinics, pasteurization of milk, inspection of dairies, laboratory examination of milk and water, sewage disposal, local water supply, tuberculosis sanatoriums, including control measures, the problem of the feebleminded, and venereal disease control. The students are also afforded an opportunity to visit and study a county health unit, the methods used in its establishment, the securing of funds, the budget, the personnel, the activities, and the essential methods employed, and to make some analysis of the results obtained in relation to local conditions. This study is directed with particular reference to the contacts which a local health department makes with the practicing physician, and the contribution which he in turn may make toward its success in a district or county.

In order to carry out these field demonstrations satisfactorily, the class is divided into four groups designated as A, B, C and D. During each four weeks of the course, all four groups of students cover the demonstrations assigned, by a system of rotation and under proper supervision. Each student is required to make a careful report on the observations made in the field. This work is so planned as to familiarize the student with practical operations of public health service, with the intention of giving him an intelligent point of view as a practitioner and also with the hope that it will serve as a basis for enlisting the interest of a limited number of promising students in the pursuit of public health work as a specialty. The cooperation of local official health agencies is indispensable in this undertaking. This has been obtained in the most gratifying way.

Correlation of Instruction in Preventive Medicine and Bacteriology.—To avoid duplication and to correlate the work of the departments more effectively, Dr. Neill, professor of bacteriology, and I have agreed on the plan which provides not less than seven lectures by the head of the department of preventive medicine and public health on the epidemiological aspects of certain diseases or diseases representing groups of organisms which are studied in the course in bacteriology. Lectures are given as concluding discussions cognate with laboratory studies on such subjects as: (*a*) some essential points in the scheme of public health; (*b*) diphtheria from a public health standpoint; (*c*) the principles involved in the control of tuberculosis; (*d*) epidemiology of influenza; (*e*) meningitis; (*f*) essential factors in the control of typhoid, and (*g*) general considerations in the prevention and eradication of communicable diseases. We believe that these lectures will not only reenforce the emphasis already placed on the fundamental importance of bacteriology in diagnosis, prevention and treatment, but will also serve to stress the broader application of the subject with particular reference to the control of disease.

In turn, Dr. Neill has agreed to give a certain number of laboratory exercises on water and milk as a part of the practical work in preventive medicine. The two departments are obviously closely associated in the work that is being done and are mutually helpful in presenting the subject matter of the respective courses. This correlation, in my opinion, is a distinct advance in the scheme of teaching medical students preventive medicine and public health. It perhaps represents a more constructive point of view than the procedure followed in some universities; namely, including the instruction in hygiene and preventive medicine in the

department of bacteriology. This too often means that much of the work in hygiene and preventive medicine is subordinated to the study of laboratory problems and methods in bacteriology and immunology, so that the student fails to appreciate fully the scope of the public health field. Further, this arrangement affords an opportunity definitely to enlist the interest and direct the attitude of the student during the beginning of his medical training concerning the meaning and function of the medical sciences in the eradication of disease.

Clinics; Medicine; Preventive Medicine.—During the clinical period for the third and fourth year students, the head of the department of medicine after a clinical discussion of certain preventable diseases has agreed that some consideration be at the same time given by a representative of the department of preventive medicine to the measures involved in prevention and control. The fact that the diagnosis, pathology, prognosis and treatment of a disease are being discussed with the patient before the class offers an unusual opportunity to impress on the student certain principles of prevention which are of special significance from the standpoint of the practitioner. Manifestly, only a limited number of clincs can be devoted to a combined plan of this kind. This method, however, certainly serves to focus the attention of the student, as perhaps cannot be done in any other way, on the important fact that the cure of the disease should not be approached as something separate and wholly apart from its prevention. It affords an easy approach to imbuing the student with the ideal that the physician's responsibility is just as binding in the protection of the individual and community against the spread of disease as the diagnosis and scientific application of measures for the relief of the patient. Moreover, the correlation of preventive and clinical teaching serves as a basis for directing the attention of both students and faculty to the problem of prevention as a great need in the evolution of human society.

APPLICATION OF COURSES TO LOCAL HEALTH PROBLEMS

Combined clinics have been conducted by the departments of medicine and preventive medicine and public health on subjects such as typhoid, malaria, and lead poisoning. This plan of teaching the epidemiologic and preventive aspects of medicine was interestingly demonstrated in a joint clinic on five cases of typhoid for the third and fourth year students. There were six members in this family, and only one failed to contract the disease. These patients, including a mother, two brothers and two sisters, were admitted to the hospital, Sept. 8, 1926. The head of the department of medicine, in conducting the clinic, presented the diagnosis and symptomatology, including treatment, and the epidemiology of the cases in question was briefly discussed by the professor of preventive medicine. Stereopticon views of the home and environment of the family were shown as a basis for explaining the occurrence of the disease. The collective time lost by the family during this illness prior to the time of the clinic was exactly 365 days. This afforded an opportunity to emphasize the economic aspect of the problem. As a result of the instruction given by the hospital staff, the home of this family has been thoroughly renovated and the interior freshly painted. A cistern has been constructed and a vault made for the privy. This is a lesson learned in hygiene through a rather severe experience.

Another clinic was held by the two departments on a case of lead poisoning, the clinical aspects of which were presented by Dr. Morgan, associate professor of medicine. This patient had been diagnosed as having a peptic ulcer, and reported to a local hospital for reexamination. The preliminary observations appeared to be suggestive of cholecystitis, but when the case was gone into more carefully, the diagnosis proved to be lead poisoning. The patient was given treatment and advised not to return to his usual place of work. A few days later, he was offered a $10 increase in salary to return to work, which was gratefully accepted. With the diagnosis of the case and advice concerning treatment, the matter ended with the clinician in charge. A fourth year medical student who was present at the time became interested in the cause of the condition and reported the case to me. He was required to get several other employees working under similar conditions to give him blood smears for microscopic examination. Out of nine specimens from as many persons, six showed definite stippling. With this much information in hand, a more exhaustive investigation was instituted through the cooperation of the commissioner of labor and the state commissioner of health, and it was found that there were about forty-five men working in an enamel factory, the conditions of which represented unmistakably an industrial hazard. Thirty-nine of these men voluntarily reported to the outpatient department of Vanderbilt Medical School for a careful physical examination, as the result of which fifteen of the men showed unquestioned lead poisoning, eleven were borderline cases, and the remaining thirteen presented potential cases of plumbism. The student in question exemplified the attitude of mind which should be maintained by the practitioner of medicine with reference to local health problems, and while it may not be possible for a busy physician to devote undue time, even though it may be profitable, to such a study, it is always feasible to communicate with the local health agency not only for determining the conditions responsible for such a dangerous poison, but for the purpose of instituting measures that will avert such an occurrence in the future. The study of this local industrial problem has been made a subject of discussion in a staff meeting of the department of medicine, and has provided splendid material for a joint clinic of the respective departments of medicine and public health in diagnosis, treatment and prevention of plumbism. Moreover, it has enlisted for the first time the interest and cooperation of state authorities concerning the dangers of lead poisoning in similar and other industrial establishments throughout the state. It seems to me that this well illustrates the kind of cooperation that should be effected in correlating and vitalizing the teaching in the preventive aspects of medicine as something not separate and independent from therapeutic and diagnostic measures, or community health problems, but in reality an integral part.

Teaching Prevention Throughout the Curriculum.—Doubtless many have reviewed the two classic monographs by Sir George Newman, one entitled "An Outline of the Practice of Preventive Medicine" and the other on "Recent Advances in Medical Education in England." In the latter publication, issued in 1923, he clearly sets forth the desirability of emphasizing prevention throughout the curriculum. I[2] have endeavored to emphasize the same point of view in the following language: "The responsibility of the practitioner concerning problems of social medicine could be stressed in the course in medicine, as well as the general prevention

2. Leathers, W. S.: Paper read before the Southern Medical Association, November, 1924.

of disease. In surgery, the control of cancer may be taught in the most graphic way. The prevention of veneral diseases and the social disease problem as a public menace can be discussed in gynecology, obstetrics, genito-urinary and skin diseases. Child hygiene, including acute infections and problems related to nutrition, could be given special consideration in pediatrics, and maternal care in obstetrics; the prevention of blindness, in ophthalmology. In the course in physiology, fatigue could be considered in relation to tuberculosis, and also the problem of nutrition affords a field for study in relation to health and disease." Other illustrations could be given concerning the teaching of the principles of prevention in pharmacology, pathology, biochemistry, anatomy and other subjects, but space will not permit. Moreover, a plan may be provided in the outpatient department for teaching the principles involved in making a periodic physical examination of an apparently well person—the detection of the beginnings of disease, as expressed in abnormal functional activity or what may be termed preclinical conditions.

The department of preventive medicine and public health, in collaboration with the heads of other departments in the medical school, is endeavoring to prepare an outline which will be used as a basis for stressing the prevention of disease in the respective courses. After all, I think that information of this kind must be somewhat adapted to the interest and point of view of each individual professor in the instruction of his department. However, the teaching personnel of the department of preventive medicine should keep in close touch and be interested in the work of all the departments of the medical school, so that, when necessary, information may be provided concerning the preventive phases of medicine. We are much interested in this undertaking at Vanderbilt, and I believe I am justified in stating that the instruction in a number of the departments has already assumed a definite preventive trend. Not only does the dean, Dr. G. Canby Robinson, use opportunities in the classroom, hospital ward, journal club and staff meeting to make reference to the preventive and economic aspects of disease, but also he is active in projecting the influence of the medical school so that it will create higher ideals and stimulate better standards of community social and health service. "Physicians are trained," according to Abraham Flexner, "that they may more intelligently and efficiently prevent or, if not prevent, then combat, disease." Even though this ideal and spirit prevail in a faculty, it is not an easy task to adjust the teaching of the medical sciences so as to permeate the curriculum with the preventive conception. I believe, however, that progress is being made in the attainment of this end, and we feel that in the accomplishment of this result a contribution will be made to medical education in training physicians whose standards and methods of practice will measure up to the requirements of a rapidly changing social order.

It is also well known that notification of transmissible diseases or the making of morbidity reports to health authorities is sadly neglected by a large percentage of the medical profession. This is a requirement that is basic in projecting any program for the investigation and control of epidemic disease. Obviously, the importance of this has not been called to the attention of students in a practical way in the majority of medical schools. In an effort to impress on the student the necessity of making morbidity reports, we have adopted the plan in the Vanderbilt Hospital of reporting all notifiable diseases that are admitted for treatment on regulation cards to the department of preventive medicine and public health, and, in turn, duplicates are sent to the proper health officer. This affords opportunity to keep under observation the treatment of certain acute infectious diseases in the hospital, and also serves as a means of forming a helpful relation with the local health authorities in the application of preventive measures. Moreover, such cases may offer opportunity for epidemiological study in the vicinity which may be used as a basis for making the teaching of the department more interesting and practical. The plan certainly serves to inform the students and interns, and impresses on them the legal requirement for the notification of communicable diseases to health authorities.

SUMMARY

I do not know any better way of closing this paper or to summarize what I have been trying to say than to quote the impressive words of the late Dr. Sedgwick,[3] who said: "The medical school which fails today to provide also liberal instruction in preventive medicine, in vital statistics, in sanitary science, in public health laboratory methods, in epidemiology; in preventive sanitation, such as the sanitation of water supplies and other branches of municipal sanitation; in preventive hygiene, such as mental, social, personal and dental hygiene; and in public health education and public health administration—that medical school is sending out its graduates unprepared for some of the most serious problems they will have to face in the immediate future.

"Obviously all these subjects cannot be injected into a curriculum already overcrowded. . . . That medical school which first begins this reformation will seize a golden opportunity."

AMEBIC DYSENTERY IN CHICAGO

PRELIMINARY REPORT OF A SURVEY OF FOOD HANDLERS FOLLOWING A SMALL OUTBREAK *

BERTHA KAPLAN, M.S.
CHARLES S. WILLIAMSON, M.D.
AND
J. C. GEIGER, M.D.
CHICAGO

Since the literature on intestinal protozoa and worms has been reviewed very carefully by Boeck and Stiles,[1] Wenyon and O'Connor,[2] and Dobell,[3] it will be sufficient for us to state briefly the works of other writers.

The general impression among many medical men is that amebic dysentery is a strictly tropical disease. That it is endemic in many tropical and subtropical regions is true, but it is not by any means limited to those regions. The first case of amebic dysentery was discovered by Loesch in 1875, in the stools of a patient suffering from dysentery in Russia. This discovery initiated the attention of a large number of workers, lasting for some forty years. The point at issue was whether the intestinal amebas of man do or do not cause dysentery. The reasons for the dispute were twofold: (1) they failed to realize that the amebas constitute a large group of organisms containing many

3. Sedgwick: Address delivered at the centennial celebration of the University of Cincinnati College of Medicine, November, 1920.

* From the Department of Medicine, University of Illinois College of Medicine, and the Department of Health, City of Chicago.

1. Boeck, W. C., and Stiles, C. W.: Studies on Various Intestinal Protozoa, Especially Ameba of Man, Bull. 133, Hyg. Lab., U. S. P. H. S.
2. Wenyon, C. M., and O'Connor, F. W.: Human Intestinal Protozoa in the Near East.
3. Dobell: The Amoeba Living in Man.

species belonging to many different genera—man harboring several different kinds, none of which are related to the free living ameba; (2) they failed further to realize that "dysentery" is not one disease but a symptom of several different pathologic conditions, as there is not one specific cause of all dysenteric symptoms.

Lewis, in 1870, and Cunningham, in 1871, discovered intestinal amebas in man while investigating cholera in India. For the most part, however, these belonged to *Endameba coli*.

At the time of Loesch's discovery, bacillary dysentery was not a clearly recognized condition and all amebas were regarded by most physicians as suspiciously alike. Loesch himself was not convinced that the amebas which he found were the cause of his patient's illness, but he left careful descriptions of the organisms, clinical symptoms and postmortem observations which show clearly that the infection was that of *Endameba histolytica*. Much of the earlier work on intestinal amebas was done by Italian workers who, in many instances, confused *Endameba histolytica* with *Endameba coli*. During the same period, Councilman and Lafleur (1891) studied Loesch's amebas. They were the first to recognize that "amebic dysentery" was caused by amebas. They confirmed the observations of Kartulis (1887) that amebic dysentery may be followed or accompanied by the formation of hepatic abscesses due to motile amebas, as Koch first showed (1887) that tropical hepatic abscesses are definitely associated with "tropical dysentery." It is not definitely known who first suggested that more than one species of amebae inhabit the human bowel, but it was Councilman and Lafleur (1891) and Lutz (1891) who stated it definitely.

By 1897 the main facts showing the relation between amebas and amebic dysentery were understood. It was clear that epidemic dysentery was due to bacteria. It was equally clear that there existed a certain type of dysentery due to amebas. Quincke and Roos have shown that the various species of intestinal amebas may be differentiated zoologically, and Cassagrandi and Barbagallo had proved that the intestinal amebas do not have anything to do with the free living species.

In 1893 Schaudinn stated that there are two different amebas inhabiting the human bowel, one pathogenic and the other harmless. Musgrave and Clegg (1904-1906), working in the Philippines, asserted that all amebas are or may become pathogenic. Their conclusions were refuted by later workers on the ground that they were unable to distinguish one species of ameba from another. Huber, in 1903, supplied the chief deficiency in our knowledge of this organism by rediscovering and first investigating the cysts of the dysentery amebas.

Walker (1908), in his first paper, repeated the errors of his predecessors because of his inability to distinguish free living from parasitic amebas; but in his subsequent paper (1911) he shows that:

1. Amebas found in the Manila water supply and those cultivable from the intestinal tract of man all belong to the genus *Ameba* (Ehrenberg) and are nonparasitic in the intestines of man.

2. Amebas parasitic in the intestinal tract of man belong to a distinct genus, *Endameba* (Cassagrandi and Barbagallo); they are obligatory parasites and cannot be cultivated. Two species are recognizable: *Endameba coli*, nonpathogenic, and *Endameba histolytica*, pathogenic. These organisms are transmitted by means of their cysts.

Later work has shown conclusively that there are at least five different species of intestinal amebas belonging to four distinct genera. Of these, however, only *Endameba histolytica* is pathogenic.

During and immediately after the war, fears were expressed from various circles, medical and zoological, both in this country and in England, that the return of the soldiers from Europe to the United States and from the Mediterranean countries and Egypt to England might result in a great increase of carriers of amebic dysentery, with a subsequent increase of clinical amebic dysentery.

Protozoan surveys in England, carried on by Carter, Mackinnon, Mathews and Smith, and later by Dobell, showed that the rate of infection for *Endameba histolytica* and other intestinal protozoa was somewhat higher in dysenteric and nondysenteric convalescents from the war areas than that of inhabitants who had never been out of England. The increase was due to travel in such countries as Egypt and Mesopotamia, where *Endameba histolytica* is more frequent than it is in England. Of 4,068 dysenteric convalescents, each examined three times, 7 per cent showed *Endameba histolytica*. Of 450 nondysenteric patients, each examined twice, 6.4 per cent showed *Endameba histolytica*. Of 3,146 persons who had been out of England and who were examined only once, 3.4 per cent were carriers of *Endameba histolytica*.

In postwar American surveys on overseas troops, Kofoid and his colleagues showed a larger percentage of carriers of *Endameba histolytica* than found for English dysenteric and nondysenteric patients from war areas about the Mediterranean. These returns were unexpected to other American authorities in protozoology because:

1. American soldiers were exposed to conditions in France for a shorter period of time than were the English soldiers.

2. The index of amebic infections in France does not appear to be higher than that of the general inhabitants of England and about the same as for the United States.

3. According to records taken from the 1919 annual report of the Surgeon General of the United States Army, bacillary and not amebic dysentery strongly predominated among the American Expeditionary Forces in France, while in the United States cases of amebic dysentery were more frequently diagnosed than was bacillary dysentery.

It remains difficult to explain the higher rate of infection for intestinal protozoa, especially *Endameba histolytica*, in American overseas troops examined at New York by Kofoid and his colleagues.

The results of the survey of 8,029 persons made by Charles Wardell Stiles and William C. Boeck of the Hygienic Laboratory showed that the rate of infection of *Endameba histolytica* with an average of 1.6 examinations per capita (irrespective of war service) was 4.1 per cent. The rate of infection in the home service men (3.5 per cent) and foreign service men (2.8 per cent) was approximately the same. They found that the rate of infection for *Endameba histolytica* in institutions was higher because institutional life, such as is found in asylums and corrective institutions, is conducive to the spread of protozoan infections.

These results compare favorably with the rate of infections found by the English. They also compare favorably with the observations of Mackinnon for troops who came chiefly from France. Native

Egyptian prisoners and cooks were three times as heavily infected, Egypt being an endemic area for *Endameba histolytica*. Healthy troops from England on duty in Egypt on the basis of one examination per capita were infected to the extent of 5.3 per cent.

The results of Stiles and Boeck show that the highest rate of infection was found in United States Public Health Service Hospital Number 43 at Ellis Island, New York, where the patients were immigrants from Italy, Greece, Roumania, Ukrania and Poland, with a few from France and England. The cases of amebic dysentery were found chiefly among immigrants from Roumania, Italy and Greece. The rate of infection among the immigrants is higher than that obtained by the Liverpool workers for dysenteric convalescent troops from Gallipoli. Therefore, *Endameba histolytica* infection should increase with the influx of immigrants from the Mediterranean countries. Their results also show that *Endameba histolytica* is more strongly established in states which are near Mexico, such as Louisiana and Mississippi, but is not by any means limited to those states. Their final results are in accord with those of the English workers Carter, Mackinnon, Mathews and Smith (1917), in that infection of *Endameba histolytica* is more prevalent among dysenteric than among nondysenteric cases, and that the dysenteric status does not influence infections of other intestinal protozoa, as *Endameba coli*. They also found that *Endameba histolytica* was more numerous in diarrheic stools. Infections with *Giardia* and *Chilomastix mesnili* were also found to be more numerous in diarrheic stools. The rate of infection was found to be approximately the same for the two sexes. The rate of infection for *Endameba histolytica* was found to be slightly higher for the black than for the white race.

INCIDENCE OF AMEBIC DYSENTERY IN CHICAGO

Repeated cases of amebic dysentery have come to our attention for the last few years. Most likely the reasons that few medical men encountered amebae in diarrheal and colitic stools were: (1) their failure to examine the stools; (2) inadequate material, and (3) inefficient laboratory examinations.

That amebic dysentery is not as uncommon as many believe it to be may be shown by the fact that at least thirty-five cases of amebic dysentery and two or three cases of amebic colitis have been treated at the Cook County Hospital, Chicago, during the last year. The success of positive results depends on (1) a thorough examination of fresh material (preferably obtained with a rectal tube or proctoscopically), and (2) careful and repeated examinations of bloody mucoid stools for living forms, and convalescents for encysted forms.

The immediate stimulus for this survey was due to the simultaneous appearance of a number (seven or eight) cases of amebic dysentery (simultaneously or within short intervals) in one large public hotel in Chicago. The disease was not confined to any particular group or nationality, but appeared in two or three guests, two housemen, a janitor, a cook, and an officer, who was stationed there during that period. The last patient with amebic dysentery, who came to the Cook County Hospital two days before, gave a history of working in that place until he became ill. It occurred to us that the simultaneous occurrence of several cases of amebic dysentery in a single place under the climatic conditions found in Chicago was presumptive evidence of a common source of infection, and this led to the suspicion of the existence of a carrier of amebic dysentery among the food handlers. Through the courtesy of the manager of the hotel, permission was granted us to examine the kitchen help, including cooks, bakers, fruit and vegetable handlers, pastry cooks, ice-cream makers, dishwashers and pantry help.

METHOD OF STUDY

The work was done right at the hotel. A room with a bath was obtained, and one person at a time was examined. Specimens were collected (by giving a glycerin suppository whenever necessary) into paraffined containers of 60 cc. capacity and were examined immediately. The greatest care was exercised in making the microscopic examinations for worms, ova and intestinal protozoa, with a special view of finding *Endameba histolytica*, cysts as well as living forms. The work was done on the basis of two examinations of each person. All smears were made of the proper opacity ("reading opacity"), warm water being used for some smears; iodine (5 per cent aqueous solution of potassium iodide saturated with iodine, diluted with equal parts of distilled water before using) for others, and eosin (1:1,000 aqueous solution) preparations. The water preparations showed living forms as well as encysted protozoa, ova and worms. The eosin stained few of the living flagellates, but the encysted flagellates as well as the encysted amebas remained unstained refractile bodies. The iodine stained the encysted forms, enabling us to study their cytology.

Our survey at the place where the cases of amebic dysentery occurred resulted in the uncovering of one case and two carriers of *Endameba histolytica*. Of the carriers showing encysted *Endameba histolytica*, one was a pantry girl and the other a vegetable girl. The clinical case was in a night cook (Assyrian), who had been ill with amebic dysentery for a number of weeks and was treated by an Assyrian physician who failed to report the case. This cook being on night duty when the work was not very heavy, was able to pursue his duties most of the time, having stayed out only two or three days with an excuse that he was suffering from "stomach trouble."

The history obtained from this cook was not entirely satisfactory; he failed to give a history of having had amebic dysentery before, but stated that he had always been in rather poor health. We cannot state definitely which of these three persons was the source of infection. We know from our experiments and that of the English workers Walker and Sellards and Dobell that the living forms are not the infectious stages; that the living forms produce the clinical symptoms of amebic dysentery, and that the encysted forms are the transmittable stages. Whether this patient had been a healthy carrier prior to developing his clinical symptoms or whether he as well as the other persons with clinical amebic dysenteries were victims of one or both of the carriers of encysted *Endameba histolytica* cannot be ascertained.

O'Connor and Wenyon, in their work in Egypt, found the largest number of carriers of amebic dysentery among food handlers and prisoners. This may be explained on the basis of the insanitary conditions of the soil as well as of the institutions. Food handlers, working with vegetables coming from contaminated soil, become infected, after which dissemination is very easy by flies as well as by careless workers. With our food handlers, conditions are different. Most if not all of our vegetables come from soil free from pathogenic amebas, but should there be one carrier in a

kitchen, the means of transmitting the disease are quite possible.

Most of the patients at the Cook County Hospital gave a history of having worked on the railroad up North or in the South, using water of unknown sanitary quality for drinking purposes. Two worked at the stock yards, and two of the patients were exsailors, one from Egypt and the other from India. Several patients stated that they had never been outside the city.

Protozoa Found in the Seven Hundred and Twenty Food Handlers

Types of Protozoa	Number of Cases	Percentage
Endameba coli	125	17.36
Endameba histolytica	16	2.22
Endolimax nana	10	1.39
Iodameba bütschlii	30	4.17
Giardia intestinalis	38	5.28
Trichomonas intestinalis	8	1.11
Chilomastix mesnili	9	1.25

RESULTS OF THE SURVEY OF THE FOOD HANDLERS

Of these 720 persons, metazoan infections were as follows: Five showed ova of *Trichuris trichiura;* two showed ova and segments of *Taenia saginata;* three showed ova of *Necator americanus* (one, a Mexican having been here only six months, and two Filipinos); one showed *Ascaris lumbricoides* ova, and one showed *Strongyloides stercoralis* in large numbers. The distribution of these carriers of *Endameba histolytica* was as follows: two cold meat handlers, one head night baker, one baker, one buffet man, four cooks (one of whom was an active case), one fry cook, one pantry girl, one vegetable salad girl, two fruit pantry girls, one girl who made waffles, and one colored steward's assistant.

The number of flagellates, worms and ova might have been increased by administering salts, because most of the specimens obtained were from the lower bowel, the region of the amebas, and most worms and the flagellates are found in the small intestines. The number of specimens showing ova and worms might have also been enhanced by using concentration methods, but that was not convenient; and, since the important point at issue was the uncovering of amebic cases and carriers, we were not so much concerned with the others.

All of the cases of amebic infections and carriers, as well as the case of hookworm, were removed from the kitchen immediately and sent to the hospital for treatment.

COMMENT

The results of various workers in protozoology, as well as our own work, indicate that amebic dysentery is not limited to the tropics and subtropics. The present state of increase of amebic dysentery may be due to a number of factors: (1) greater stress being placed on medical zoology in college curriculums; (2) improved clinical laboratory examinations; (3) increased migration from the Southern to the Northern states, and (4) the reporting of cases, which acts as a stimulus toward more thorough examinations of diarrheic stools.

Stools of persons with amebic dysenteries can very often be recognized macroscopically as well as microscopically. Amebic dysentery stools are bloody, mucoid and microscopically free from macrophages and pus unless the case is of long standing, when secondary infections set in. On the other hand, stools showing a great deal of pus, a rich cellular exudate, some mucus and only now and then streaks of blood, should be looked on with suspicion as being bacillary in nature. In all such cases, bacteriologic examinations for dysentery bacilli should be made without delay. Failure to find dysentery bacilli in cases of long standing does not rule out bacillary dysentery.

Extreme care should be exercised in examining freshly obtained specimens (collected preferably with a rectal tube or proctoscopically) for amebas. This should be done immediately after discovering the symptoms and before treating the patient. After specific treatment, the organisms begin to disintegrate and lose their typical features, necessitating the fixation, staining and examination of the cells for typical *Endameba histolytica* nuclei. All convalescents of amebic dysentery should be examined repeatedly for encysted *Endameba histolytica*. Periodic examinations should be made of their stools after they are discharged from the hospital.

CONCLUSIONS

1. Amebic dysentery is not limited to the tropics and subtropics.

2. Careful examinations of freshly obtained specimens of feces should be made in all diarrheas and cases of colitis showing bloody mucus.

3. In postdiarrheal stages, diagnosis can be made readily by finding encysted *Endameba histolytica*.

4. These results are presented as a preliminary study, for it is recognized that the incidence of carriers of amebic dysentery in normal persons other than food handlers should be investigated for Chicago, a study which is now under way.

ABSORPTION OF CALCIUM FROM THE INTESTINAL TRACT OF HUMAN SUBJECTS

THE INFLUENCE OF FOODS *

JOSEPH H. ROE, PH.D.
AND
BERNARD S. KAHN, A.B.
WASHINGTON, D. C.

The literature on the therapeutic value of calcium salts contains many conflicting reports, and the results obtained in practice have also been somewhat discordant. This is probably due to a lack of knowledge of the principles governing the absorption of calcium from the alimentary tract.

Many investigators have reported relationships from metabolism experiments in which the fecal calcium and the urinary calcium were estimated after the ingestion of calcium salts under varying conditions. Much valuable information has been obtained from experiments of this kind, but an examination of the physiologic mechanism of the absorption and excretion of calcium shows that these procedures are not entirely applicable to the investigation of the absorption of calcium from the intestinal tract. Experimental work has shown that calcium absorption occurs in the small intestine and that calcium excretion occurs by two eliminatory channels, the large intestine and the kidneys. Absorbed calcium may be excreted in the feces or in the urine, depending on conditions that are poorly understood. Fecal calcium is, therefore, the unabsorbed calcium plus the

* From the Department of Biochemistry, George Washington University School of Medicine.

calcium excreted by way of the large intestine; and urinary calcium is only a part of the calcium that has been absorbed from the small intestine. A definite relation between these two excretory fractions does not exist; in fact, they can be varied widely by experimental conditions. Experiments involving the estimation of fecal and urinary calcium, therefore, do not give a true measure of calcium absorption, because they do not consider the calcium that is absorbed from the small intestine and excreted into the large intestine.

In consideration of these facts, we believe that a very desirable method of investigation of calcium absorption from the intestinal tract is the estimation of the calcium content of the blood at proper intervals, following the ingestion of calcium salts under the experimental conditions to be studied.

In a previous paper [1] we reported results of experiments on normal medical students who were given varying doses of calcium lactate in aqueous solution by mouth, under fasting conditions, blood serum calcium estimations being carried out on samples of blood drawn before ingestion and at hourly intervals following ingestion for from ten to fourteen hours. With 2 Gm. doses of calcium lactate, the highest maximal elevation of the serum calcium was 54 per cent, the average of three experiments being 49 per cent; with 5 Gm. doses the highest maximal elevation of the serum calcium was 108 per cent, the average of four experiments being 80 per cent; with 20 Gm. doses the highest maximal elevation of the serum calcium was 102 per cent, the average of three experiments being 81 per cent. We therefore concluded that 5 Gm. of calcium lactate approximately represents the most desirable dosage for oral administration, since this amount produced almost as high an average maximal elevation as the 20 Gm. dose, and also produced a longer sustained elevation of the serum calcium.

Bauer and Ropes [2] have recently reported work in quantitative disagreement with our experiments on absorption. The highest maximal elevation of the serum calcium concentration obtained by these investigators, when 5 Gm. of calcium lactate was given by mouth to normal subjects, was 14 per cent, the average elevation being 8 per cent. When they gave 10 Gm. of calcium lactate by mouth, they obtained a maximal elevation of the serum calcium of from 5 to 28 per cent. While these authors assert that they disagree with our work, we feel that they have confirmed our results, as they are in qualitative agreement with us. Their results, as well as our own work, show that the blood calcium concentration can be increased by oral administration of calcium salts, if given in large enough doses, and that the proper dosage is much greater than that recommended by the U. S. Pharmacopeia, which is 1 Gm.

In support of our results, we would say that they are in general agreement with recent reports in the literature. Hjort [3] obtained from 17 to 48 per cent elevations of the serum calcium in dogs given calcium lactate by mouth, with doses equivalent to 0.2727 Gm. of calcium oxide per kilogram of body weight. Irving [4] injected buffered and unbuffered calcium chloride and calcium lactate solutions into the duodenum of anesthetized dogs and obtained maximal elevations of the serum calcium of 55, 40, 61, 140, 214 and 108 per cent, with dosages varying from 0.04 to 0.24 Gm. of calcium per kilogram of body weight. With cats given 0.88 Gm. of calcium as calcium chloride, Lasch and Neumayer [5] obtained maximal elevations of the serum calcium of 131, 100, 133, 172 and 140 per cent; and 69 and 50 per cent elevations of the serum calcium with 0.44 Gm. doses of calcium as calcium chloride. With dogs given 0.44 Gm. of calcium as calcium chloride, these authors obtained maximal elevations of the serum calcium of 25, 19 and 64 per cent; with dogs given 0.88 Gm. of calcium, they obtained maximal elevations of the serum calcium of 53 and 28 per cent; and with dogs given 0.66, 1.1 and 2.2 Gm. of calcium in the form of the chloride, they obtained maximal elevations of the serum calcium of 50, 60 and 73 per cent, respectively. In one experiment with a human subject given 4.4 Gm. of calcium as calcium chloride, Lasch and Neumayer obtained a maximal elevation of the serum calcium of 38 per cent; and with two other human subjects given 7.7 Gm. of calcium in the form of calcium chloride, maximal elevations of the serum calcium of 23 and 58 per cent were obtained.

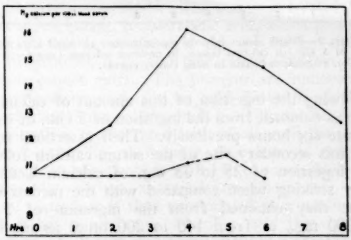

Chart 1.—Blood serum calcium concentrations obtained after the ingestion of 5 Gm. of calcium lactate in aqueous solution (upper curve) and 20 Gm. of calcium lactate in milk (lower curve). Each curve in this and the following charts was made from data obtained on a separate day on the same subject.

Bauer and Ropes, in their comment, state that Clark,[6] Denis and Minot,[7] and Salvesen, Hastings and McIntosh [8] were not able to demonstrate any rise in the serum calcium after feeding calcium salts, but they fail to state that these investigators did not examine the blood at frequent intervals immediately following the ingestion of the calcium salts but carried out single isolated calcium estimations twenty-four hours or several days after the last ingestion of calcium. These citations of the literature might give the impression that it is a difficult thing to elevate the serum calcium by oral administration of calcium salts, which is not the case. In our examination of the literature, we have not found a single report of a failure to elevate the serum calcium by oral administration of calcium salts in aqueous solutions to subjects free from the influence of foods, or other known inhibitory factors, when the investigator carried out frequent blood calcium estimations immediately following the ingestion of calcium salts.

We take further exception to the report of Bauer and Ropes, who, in relating their experiments on subjects given 5 Gm. of calcium lactate, say: "At the

1. Kahn, B. S., and Roe, J. H.: Calcium Absorption from the Intestinal Tract in Human Subjects, J. A. M. A. **86**: 1761 (June 5) 1926.
2. Bauer, Walter; and Ropes, Marian W.: The Effect of Calcium Lactate Ingestion on Serum Calcium, J. A. M. A. **87**: 1902 (Dec. 4) 1926.
3. Hjort, A. M.: J. Biol. Chem. **65**: 783 (Oct.) 1925.
4. Irving, Laurence: J. Biol. Chem. **68**: 513 (June) 1926.
5. Lasch, Fritz; and Neumayer, Karl: Biochem. Ztschr. **174**: 333-340 (Aug.) 1926.
6. Clark, G. W.: J. Biol. Chem. **43**: 89 (Aug.) 1920.
7. Denis, W., and Minot, A. S.: J. Biol. Chem. **41**: 357 (March) 1920.
8. Salvesen, H. A.; Hastings, A. B., and McIntosh, J. F.: J. Biol. Chem. **60**: 327 (June) 1924.

end of the sixth hour the subject was allowed to have a light lunch containing 25 to 35 mg. of calcium. The ingestion of this test amount of calcium lactate did have a definite effect on the serum calcium level, as shown in chart 1." They do not state just what the "definite effect on the serum calcium level" is, but examination of their curves shows in many instances practically the same elevation of the serum calcium

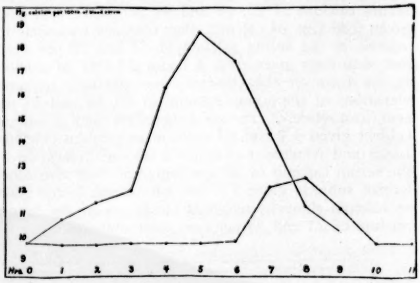

Chart 2.—Blood serum calcium concentrations obtained after the ingestion of 5 Gm. of calcium lactate in aqueous solution (upper curve) and 55 Gm. of calcium lactate in milk (lower curve).

following the ingestion of this amount of calcium lactate as obtained from the ingestion of 5 Gm. of calcium lactate six hours previously. Their assertions regarding this secondary rise of the serum calcium following the ingestion of 25 to 35 mg. of calcium lactate are very striking when compared with the modest elevations they obtained from the ingestion of 5 Gm. (5,000 mg., or from 140 to 200 times as much) of calcium lactate six hours previously in the same experiments on the same subjects.

Since our last report we have continued our investigation of calcium absorption, and in this paper report results on the influence of food when ingested simultaneously with the calcium salt. In brief, our experiments consisted of the estimation of the blood serum calcium, either hourly or at two-hour intervals, following the ingestion of different foods to which calcium lactate in varying amounts was added. Each experiment was started after the subject had fasted approximately fifteen hours. The method of calcium estimation used was the colorimetric procedure [9] which we developed and with which we have had considerable experience.

REPORT OF EXPERIMENTS

EXPERIMENT 1.—*Influence of milk.* A normal subject, aged 33 years, and weighing 154 pounds (70 Kg.), was given 5 Gm. of calcium lactate orally in 250 cc. of water. Samples of blood were taken at two-hour intervals for eight hours, and the serum calcium content of these samples was determined. This experiment was done to establish a control absorption value on this subject when calcium lactate was administered orally in water. On another day, the same subject was given orally 5 Gm. of calcium lactate in 250 cc. of whole milk, at hourly intervals for four hours. Blood samples were collected hourly, and the serum calcium content of each sample was determined. The results are shown in chart 1. The curve showing absorption when calcium lactate in aqueous solution was ingested reached a peak of 16.1 mg. per hundred cubic centimeters of serum (a 50 per cent elevation) four hours after ingestion, and did not return to the normal fasting level in eight hours. The curve showing absorption when the calcium lactate was ingested in milk reached a maximal elevation of 11.4 mg. of calcium per hundred cubic centimeters of serum (6.5 per cent rise) five hours after ingestion, and returned to the normal fasting level by the seventh hour. Four times as much calcium lactate was given in the experiment with milk, but the contrast between the two curves is very marked. This cannot be attributed to overdosage, as in previous work [1] we have found a marked increase in the blood calcium content with 20 Gm. doses when administered in aqueous solution by mouth.

EXPERIMENT 2.—*Influence of milk.* A normal subject, aged 20, weighing 150 pounds (68 Kg.), was given orally 5 Gm. of calcium lactate in 250 cc. of water. A sample of blood was drawn before ingestion and at hourly intervals after ingestion for ten hours, and the serum calcium of these samples was estimated in order to establish a control value on this subject when calcium lactate was administered in aqueous solution. On another day a preliminary blood sample was drawn as a control, and 5 Gm. of calcium lactate in 250 cc. of milk was given every hour for eleven hours, other food not being taken during the experiment. In all, 55 Gm. of calcium lactate in 2,750 cc. of milk was ingested. The results of these experiments are shown in chart 2. The curve obtained with 5 Gm. of calcium lactate in aqueous solution shows a maximal elevation at about the fifth hour after ingestion, when the serum contained 18.6 mg. of calcium per hundred cubic centimeters (an elevation of 91 per cent), and returned practically to normal by the tenth hour. The curve obtained when the calcium lactate was ingested in milk did not rise until about the seventh hour after the first calcium ingestion, and the maximal elevation shown in this experiment was 12.5 mg. per hundred cubic centimeters of serum (a 28 per cent rise). This curve returned to normal at the tenth hour after ingestion, even though calcium lactate in 5 Gm. amounts was given hourly. The contrast between these two curves is very striking. Fifty-five grams of calcium lactate administered in milk over a period of eleven hours produced very little elevation of the serum calcium, while on another day a single 5 Gm. dose administered in water gave a very definite elevation of the serum calcium of the same subject. These experiments demonstrate conclusively that milk is an unsatisfactory vehicle in which to administer calcium salts.

EXPERIMENT 3.—*Influence of carbohydrates.* A normal fasting subject, aged 23, weighing 145 pounds (66 Kg.), was given orally 5 Gm. of calcium lactate in 250 cc. of water, and blood samples were drawn at two-hour intervals for eight hours. The serum calcium of these samples was determined

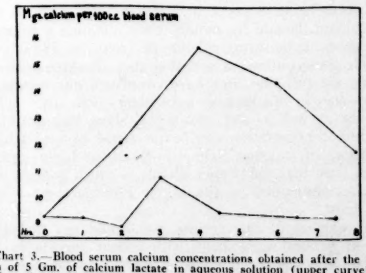

Chart 3.—Blood serum calcium concentrations obtained after the ingestion of 5 Gm. of calcium lactate in aqueous solution (upper curve) and 5 Gm. of calcium lactate in wheat cakes (lower curve).

in order to obtain a control absorption value on this subject when given calcium lactate in water. On another day this subject was given a meal of wheat cakes, butter and syrup, to which 5 Gm. of calcium lactate was added. The meal was ingested with a minimal amount of fluids. Hourly serum calcium estimations were made at first, and later in the experiment determinations were made at two-hour intervals until eight hours had elapsed. The results of these two experiments are shown in chart 3. In the water ingestion experiment, the curve reached a peak about the fourth hour after ingestion, when the serum calcium was 15.6 mg. per hundred cubic

9. Roe, J. H., and Kahn, B. S.: J. Biol. Chem. **67**: 585 (March) 1926.

centimeters (a 68 per cent elevation), and did not return to normal by the eighth hour after ingestion. In the experiment in which calcium lactate in wheat cakes was ingested, the curve shows a slight elevation at the third and fourth hours after ingestion, when the serum calcium was 10.8 and 9.5 mg. per hundred cubic centimeters, respectively, the maximal elevation being 16 per cent. All other analyses during this experiment gave figures around the preingestion blood calcium concentration. These experiments indicate that foods having

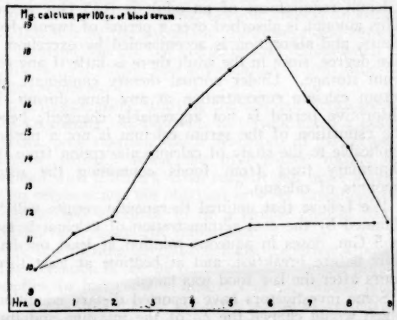

Chart 4.—Blood serum calcium concentrations obtained after the ingestion of 5 Gm. of calcium lactate in aqueous solution (upper curve) and 5 Gm. of calcium lactate in pork sausage (lower curve).

a high carbohydrate content diminish the rate of absorption of calcium from the intestinal tract when such foods are ingested simultaneously with calcium lactate.

EXPERIMENT 4.—*Influence of proteins.* A normal fasting subject, aged 24, weighing 138 pounds (62.6 Kg.), was given orally 5 Gm. of calcium lactate in 250 cc. of water and the serum calcium was determined hourly for nine hours to establish a control value on this subject when given calcium lactate in aqueous solution. On another day this subject was given about 75 Gm. of pork sausage to which 5 Gm. of calcium lactate was added. Blood samples were drawn at two hour intervals at first, then at irregular intervals for nine hours, and the serum calcium of these samples was determined. The results of these experiments are shown in chart 4. In the control experiment in which calcium lactate in aqueous solution was ingested, the curve shows a marked elevation of the serum calcium, a maximal value of 18.5 mg. per hundred cubic centimeters of serum (a rise of 88 per cent) being obtained at the sixth hour following ingestion. In the experiment in which calcium lactate mixed with pork sausage was ingested, the serum calcium was elevated slightly, the highest value obtained being 11.7 mg. per hundred cubic centimeters. The elevation of the serum calcium in the latter experiment was very small (18 per cent), as compared with that obtained in the control experiment in which calcium lactate in aqueous solution was ingested. The serum calcium had not returned to normal in the meat ingestion experiment when the last sample of blood was drawn, but the contrast between the two curves over a period of nine hours indicates that foods of a high protein content depress the rate of absorption of calcium from the alimentary tract when such foods are ingested simultaneously with calcium lactate.

EXPERIMENT 5.—*Influence of proteins.* This experiment was carried out as a check on experiment 4, since the serum calcium had not returned to normal in the latter experiment when the last sample of blood was drawn. The same subject was used. This subject was given 5 Gm. of calcium lactate in about 75 Gm. of beef sausage. Blood samples were drawn at two-hour intervals for ten hours and the serum calcium of these samples was estimated. The results of this experiment are shown in chart 5. The control curve showing the absorption of calcium when ingested in aqueous solution is the same as in experiment 4. The curve obtained when 5 Gm. of calcium lactate in beef sausage was ingested showed slight elevations of the serum calcium between the second and eighth hours following ingestion, and returned to normal by the tenth hour. The highest serum calcium elevation was 10.7 mg. per hundred cubic centimeters (a rise of 8.6 per cent). This experiment shows conclusively that a high protein meal, when ingested simultaneously with calcium lactate, depresses the rate of absorption of calcium from the intestinal tract.

COMMENT

It must be admitted that variations will occur in results obtained with the same subject on different days, because of a difference in conditions in the subject or of experimental error. However, all experiments were started after fifteen hours of fasting, and efforts were made to carry out the experiments under identical conditions. As the method of analysis used is a new procedure, we would emphasize what we consider to be its advantages. In this method, the calcium is precipitated as calcium phosphate from an alkalized trichloracetic acid serum filtrate, and estimated as phosphate by the Benedict and Theis molybdic oxide colorimetric method,[10] slightly modified. In the first place, it is a colorimetric method and is therefore more applicable to the determination of small amounts of substances than the titration methods. The serum is treated with a protein precipitant, trichloracetic acid, which produces a reaction that is on the acid side of the iso-electric point of proteins, a p_H at which calcium-protein combinations cannot exist. The proteins are removed by the trichloracetic acid, and an acid filtrate is obtained in which the calcium is present in a highly soluble form. This filtrate is then treated with alkali until the p_H of the least solubility of calcium phosphate is reached, and trisodium phosphate is added in excess, which precipitates the calcium as tricalcium phosphate. The calcium phosphate is thus precipitated in a medium in which it has a minimum solubility, and the common ion effect of excess phosphate further depresses its solubility. This precipitate is then washed with 50

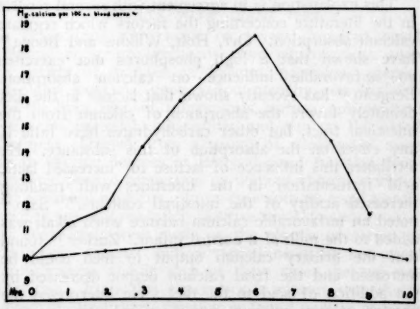

Chart 5.—Blood serum calcium concentrations obtained after the ingestion of 5 Gm. of calcium lactate in aqueous solution (upper curve) and 5 Gm. of calcium lactate in beef sausage (lower curve).

per cent alkalized alcohol, in which calcium phosphate has a very low solubility, and the phosphate is finally estimated colorimetrically. We believe that this procedure consists of ideal theoretical conditions to obtain accurate results. Practically, it has been checked against the Fiske [11] and Kramer-Tisdall [12] methods on

10. Benedict, S. R., and Theis, R. C.: J. Biol. Chem. **61**: 63 (Aug.) 1924.
11. Fiske, C. H.: J. Biol. Chem. **51**: 55 (March) 1922.
12. Kramer, Benjamin; and Tisdall, F. F.: J. Biol. Chem. **47**: 475 (Aug.) 1921.

normal blood serums with satisfactory comparative results. We have used the method in our own laboratory for one year without noting any deviation from clinical observations. For experimental work it also has the advantage that a number of determinations can be carried out simultaneously and read against the same standard, thus giving ideal comparative results. We therefore believe that the marked differences between the curves showing absorption of calcium when ingested in water and ingested in foods could not be due to experimental error or to variations in the subjects.

In explanation of the low absorbability of calcium from the intestinal tract, when mixed with foods, we suggest that it is probably due to a depression of the solubility of calcium by the alkaline digestive fluids secreted into the intestine coincident with the introduction of foods. It is true that water stimulates the production of digestive fluids, but not to the same extent as foods. Certain calcium compounds, such as the phosphate and the carbonate, are quite soluble in acid solutions, but have a very low solubility in solutions that are alkaline to a p_H of 7. When food passes into the duodenum, pancreatic and intestinal secretions and bile are poured into the intestine. The pancreatic and intestinal secretions are alkaline, and they contain phosphate and carbonate ions which will precipitate calcium from solution. The bile is alkaline and also contains calcium precipitants, especially fatty acids, which are capable of reacting with calcium to form insoluble calcium soaps. The result of the introduction of foods into the duodenum is an outpouring of alkaline digestive fluids which precipitate calcium from solution and maintain a medium with a p_H of from 8 to 10, in which the calcium precipitates formed are highly insoluble. Since absorbability is dependent on solubility, it seems reasonable that factors which decrease solubility will interfere with the absorption of calcium from the intestinal tract.

This explanation is in agreement with several reports in the literature concerning the factors which regulate calcium absorption. Orr, Holt, Wilkins and Boone [13] have shown that a high phosphorus diet exercises an unfavorable influence on calcium absorption. Bergeim [14] has recently shown that lactose in the diet definitely favors the absorption of calcium from the intestinal tract, but other carbohydrates have little if any effect on the absorption of this substance. He attributes this influence of lactose to "increased lactic acid fermentation in the intestines with resulting increased acidity of the intestinal contents." Sato [15] noted an unfavorable calcium balance when alkali was added to the milk of a normal infant. Zucker [16] found that the urinary calcium output in men could be increased and the fecal calcium output decreased by the addition of acid to the diet. He interpreted the greater urinary calcium output as indicating greater calcium absorption. Zucker, Johnson and Barnett [17] produced rickets in rats by the addition of sodium bicarbonate to the diet. These authors also were able to make a rickets-producing diet nonrachitic by increasing the acidity through the addition of ammonium chloride. Irving [4] has shown that the absorption of calcium is much greater when administered in the form of a solution of calcium chloride acidified with acetate buffers to a p_H of 3.8 than in a solution of neutral unbuffered calcium chloride.

Our experiments are not to be interpreted as indicating that the calcium of foods is not readily absorbed. Our studies concern the absorption of calcium when large amounts of calcium salts are ingested with, and without, foods. According to Sherman,[18] the average calcium requirement of an adult is 0.45 Gm. a day. This amount is absorbed over a period of twenty-four hours, and absorption is accompanied by excretion in like degree, since in the adult there is little if any calcium storage. Under normal dietary conditions, the serum calcium concentration at any time during the absorptive period is not appreciably changed; hence the estimation of the serum calcium is not a method applicable to the study of calcium absorption from the alimentary tract from foods containing the usual amounts of calcium.

We believe that optimal therapeutic results will be obtained by the oral administration of calcium lactate in 5 Gm. doses in aqueous solution at least one-half hour before breakfast, and at bedtime at least three hours after the last food was taken.

Some investigators have reported dietary conditions which would change the p_H of the intestine and thus bring about a more favorable absorption. The p_H of the intestinal tract undoubtedly plays an important part in the absorption of ingested calcium, but practical conditions forbid the introduction of such factors as high lactose or buffers into the diet. Our work shows that such procedures are unnecessary, since they can be readily avoided by the administration of calcium salts in proper amounts under fasting conditions.

Our experiments show that intravenous injection of calcium salts is not justified, since proper oral administration produces a prolonged serum calcium elevation and does not incur the dangers of the intravenous technic.

A prevailing opinion concerning the etiology of rickets is that there is a diminished absorption of calcium from the alimentary tract, even though calcium is present in the diet in ample amounts. The feeding of calcium as prophylactic or therapeutic measures has often failed to prevent or cure rickets. Possibly our experiments offer an explanation of such results.

We believe that therapeutic results will be more uniform when calcium salts are properly administered, and that deductions as to the therapeutic value of calcium salts should be delayed until a sufficient amount of work on various diseases under optimal absorptive conditions has been accumulated.

SUMMARY

1. The serum calcium concentration of normal fasting subjects is definitely elevated by the oral administration of sufficient amounts of calcium lactate in aqueous solution. We believe that the optimal dose of this salt is approximately 5 Gm.

2. Simultaneous ingestion of various foods with 5 Gm. and larger amounts of calcium lactate produced a marked depression of the rate of absorption of calcium from the intestinal tract.

3. Since proper oral administration of calcium salts has been shown to elevate the serum calcium level for extended periods of time, it is no longer necessary to incur the dangers of the intravenous technic.

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THE DIAZO TEST IN NEPHRITIS*

HARRY BLOTNER, M.D.
AND
REGINALD FITZ, M.D.
BOSTON

This paper reports observations on the value of the blood diazo test in the prognosis of nephritis. Our attention was drawn to the possible clinical importance of this test by the papers of Andrewes [1] and Hewitt [2] of England, Becher [3] of Germany and Rabinowitch [4] of Canada. We cannot find any mention of it in American medical literature.

Andrewes, while studying the van den Bergh method for estimating bile pigments in serum, noted a characteristic pink reaction which developed in the serum of uremic patients when the protein-free filtrate was treated with Ehrlich's diazo reagent and made alkaline. This reaction was not obtained in other conditions than uremia, and appeared to be a simple clinical test of considerable diagnostic importance.

A few months later, Becher also reported a positive diazo reaction in certain nephritic cases. From previous studies, he had come to believe that the clinical picture of uremia was due to the toxic action of certain aromatic amino-acids normally formed in the intestinal tract and excreted through the kidney, but held back in the body if the kidneys were sufficiently injured. If this hypothesis was correct, he reasoned, the blood of patients with marked renal insufficiency should react with the diazo reagent. Accordingly, he experimented with a series of bloods, obtaining a positive diazo reaction on blood filtrates after protein precipitation by trichloracetic acid in the uremic cases, and a negative reaction in the controls. He made use of a different technic from that of Andrewes, but states that in all probability the substance described by Andrewes and himself as reacting with the diazo reagent are identical. It is interesting that Andrewes in London and Becher in Halle, working independently, by different methods, and on unrelated problems, should have made the same observations at about the same time.

Hewitt, slightly improving Andrewes' technic, confirmed his observations on the specificity of the test in uremia and attempted to identify the substance producing the reaction. He concluded that an amine such as histamine or tyramine probably caused it, and agreed with Andrewes that it was not due to the accumulation in the blood of such constituents as urea, uric acid or creatinine. Like Becher, he interpreted the results as due to the presence of a substance, normally formed in the intestines and excreted in the urine, but retained in the blood when the renal path of elimination was disordered.

Finally, Rabinowitch made a clinical study of the value of the diazo color-reaction in the differential diagnosis of uremia, using Hewitt's modification of Andrewes' method. He corroborated the conclusions of Andrewes and Hewitt. A positive diazo reaction was obtained only in the blood of patients showing marked retention of waste products, owing to renal lesions such as advanced chronic nephritis or acute surgical conditions of the kidneys. He considered the test a valuable aid in the diagnosis of renal insufficiency.

METHOD OF PERFORMING THE DIAZO TEST

We have performed the diazo reaction in a series of cases, using the method described by Hewitt, the details of which are as follows: To 1 cc. of blood plasma or serum is added 2 cc. of 96 per cent alcohol. The proteins are allowed to precipitate, and the mixture is filtered or centrifugalized. The clear filtrate, or supernatant fluid from the centrifugalized specimen is then collected. To 1 cc. of this clear fluid is added 0.5 cc. of alcohol and 0.25 cc. of freshly prepared diazo reagent. The mixture is boiled for thirty seconds, and then a few drops of a 10 per cent solution of sodium hydroxide are added.

The characteristic reaction is the very rapid development of a pink color, which may disappear rapidly. The intensity of the color and the rate of its disappearance depend on the concentration of the substance causing the reaction in the blood. The mixture must be watched very carefully during the addition of the alkali, since the pink may appear and disappear within a few seconds. The diazo reagent can be prepared according to the directions of McNee.[5] It consists of a mixture of two solutions, each of which keeps well, but which must always be freshly made immediately prior to a test. The two solutions are prepared in the following fashion:

Solution A: sulphanilic acid, 1 cc.; concentrated hydrochloric acid, 15 cc.; distilled water, 1,000 cc.

Solution B: sodium nitrite, 0.5 Gm.; distilled water, 100 cc.

The reagent as used for the test consists of 25 cc. of solution A, to which is added 0.75 cc. of solution B.

As can be seen, the test is simply performed, it takes but little time for its completion, and it requires comparatively little apparatus.

RESULTS WITH DIAZO TEST

Diazo tests were made on several hundred blood plasma or serum specimens from patients with such a variety of diseases as diabetes, pernicious anemia, syphilis, leukemia, gout, yellow atrophy and cirrhosis of the liver, typhoid, tuberculosis, asthma, epilepsy and subacute bacterial endocarditis, and also on 100 blood samples obtained from a group of cardiorenal cases with varying degrees of lessened renal function from chronic passive congestion or without clinical evidence of advanced nephritis. In no case without renal insufficiency was an even mildly positive test obtained.

Diazo tests were made on the plasma or serum of thirty-six patients with advanced nephritis and renal insufficiency, and in each of these cases the test was positive. From this experience it appears true that a positive blood diazo reaction is found only in cases of profound renal insufficiency and does not occur in other conditions.

PROGNOSTIC VALUE OF BLOOD DIAZO REACTION IN NEPHRITIS

An attempt was made to estimate the practical significance of the diazo reaction as a routine laboratory test. Of the thirty-six cases in this series which yielded positive tests, in twenty-eight (78 per cent) death occurred within a comparatively short time after the reaction was found to be positive. In the fatal cases

* From the medical clinic of the Peter Bent Brigham Hospital.

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4. Rabinowitch, I. M.: Observations on the Value of the Diazo-Color-Reaction in the Differential Diagnosis of Uremia, Canad. M. A. J. **15**: 725-728 (July) 1925.
5. McNee, J. W.: The Use of the Van den Bergh Test in the Differentiation of Obstructive from Other Types of Jaundice, Brit. M. J. **1**: 716-717 (May 6) 1922.

the relation between the time when the test was first found to be positive and the occurrence of death is illustrated by table 1.

In nineteen of the fatal cases (73 per cent) death occurred within a month of the time the test was found to be positive, and only three of the patients (8 per cent) lived for more than three months. The eight living

TABLE 1.—*Length of Life in Twenty-Eight Fatal Cases of Nephritis Giving Positive Blood Diazo Tests*

Number of Cases	Duration of Life after Diazo Test Was First Found Positive
14	1 to 8 days
5	16 to 28 days
6	1 to 3 months
2	4 months
1	12 months

patients with positive tests have been under observation for periods ranging from several weeks to twelve months. On the whole, it appears that a positive blood diazo test is a very ominous sign, is usually followed by a fatal outcome within a short space of time, but may occasionally be present for a long interval without the immediate development of fatal uremia.

A comparison was made between the results of the phenolsulphonphthalein test, the blood urea nitrogen concentration and the diazo test in these thirty-six cases. A positive diazo test was not obtained in any patient able to excrete more than a small percentage of phenolsulphonphthalein in two hours and ten minutes following the intramuscular injection of 6 mm. of the dye. On the other hand, parallelism was not found between the blood urea nitrogen concentration and the initial appearance in the blood of the substance producing the diazo reaction. This fact is illustrated by table 2.

TABLE 2.—*Relation Between the Blood Urea Nitrogen Concentration and the Blood Diazo-Reacting Substance*

Number of Cases	Blood Urea Nitrogen Concentration in Mg. per 100 Cc. of Blood When a Positive Blood Diazo Test Was First Obtained
7	28 to 50
8	51 to 80
10	81 to 104
7	105 to 150
4	160 to 250

These observations suggested that the diazo test might afford a practical aid in the prognosis of those nephritic cases presenting a low phenolsulphonphthalein excretion and only a slight increase in the blood nitrogenous substances, since the diazo reacting substance, of very grave import, seemed often to accumulate in the blood in sufficient concentration to yield a positive reaction before there was necessarily any accumulation of the nitrogen. We have used the test in this fashion with useful practical results, as can be seen by the two following case reports:

CASE 1.—A man, aged 50, came to the hospital, Sept. 19, 1925, complaining of "high blood pressure and constipation." Six months previously he had consulted a physician who told him that his blood pressure was too high and that the urine contained albumin. During the ensuing time he had been fairly comfortable on a low-protein diet and by leading a life of restricted activity, except for a gradually increasing dyspnea on exertion. He was able to work, however, and came for examination because he was discouraged by not feeling perfectly well.

Physical examination revealed a considerable degree of peripheral arteriosclerosis. The heart was hypertrophied and dilated, but otherwise not remarkable. The systolic blood pressure was 230, and the diastolic pressure 130. The eyegrounds had well marked vascular changes, and, as well, several scattered areas of old exudate and fresh retinal hemorrhages. There was slight pitting edema over the ankles. The urine was of low specific gravity and contained a trace of albumin and numerous hyaline casts in the sediment. The blood urea nitrogen concentration was 43 mg. per hundred cubic centimeters of blood. On the whole, the clinical picture was that of vascular disease with the element of cardiac failure as outstanding as that of renal failure. The diazo test was positive, and, therefore, a guarded prognosis was given. The patient died five weeks later in uremic coma with a blood urea nitrogen value of 238 mg. per hundred cubic centimeters of blood.

CASE 2.—On the other hand, a man, aged 60, entered the hospital, March 2, 1926, complaining of shortness of breath. Four years previously he had been told that he had "kidney trouble," and a year previously that he had "high blood pressure." For several months before coming to the hospital he had complained of increasing dyspnea, indigestion and loss of appetite, and for several days had been mentally confused.

Physical examination revealed a considerable degree of peripheral arteriosclerosis. The heart was hypertrophied and dilated, but otherwise not remarkable. The systolic blood pressure was 240, and the diastolic pressure 134. The eyegrounds had well marked vascular changes, an occasional fresh retinal hemorrhage, but no patches of exudate. There was no peripheral edema, though the liver was enlarged and tender, and there were numerous scattered râles heard in both chests. The urine was of low specific gravity, and contained a trace of albumin and numerous casts in the sediment. The blood urea nitrogen concentration was 52 mg. per hundred cubic centimeters of blood. The phenolsulphonphthalein excretion in two hours and ten minutes was 16 per cent. On the whole, the clinical picture was again that of vascular disease, with the element of renal failure as outstanding as that of cardiac failure. The diazo test was negative, however, and therefore the mental confusion and digestive symptoms were not considered of uremic origin, and a favorable prognosis was made. With rest and digitalis, the clinical condition improved, the mental symptoms cleared up, the blood urea nitrogen concentration fell to 27 mg. per hundred cubic centimeters of blood, the dyspnea largely disappeared, and after a stay of four weeks the patient left the hospital much improved.

We have also used the test as an aid in the differential diagnosis of uremia from cerebral hemorrhage or comas of other than renal origin. On the whole, it has proved a satisfactory and simple method, rapidly performed and yielding positive information of unmistakable value.

NATURE OF THE DIAZO REACTING SUBSTANCES

An attempt was not made to identify the specific substance causing the diazo reaction. Apparently, however, as Andrewes and Becher have noted, it is produced by some substance normally formed in the process of metabolism which does not accumulate in the blood in sufficient concentration to produce the reaction so long as the kidneys are intact. This statement is borne out by observations on two nephrectomized animals.

In neither animal was the diazo reacting substance present in the blood immediately after the kidneys were removed. In each animal, however, strongly positive tests were obtained a short time after total nephrectomy, a fact suggesting that the substance was being constantly formed and excreted, but accumulating in the blood in sufficient concentration to give a positive test only when the renal path of elimination was destroyed. Our obtaining a positive test in the rabbit disagrees with the observation of Andrewes, who failed to obtain positive reactions in such animals with chronic nephritis when the urea concentration was between 300 and 100 mg. of urea per hundred cubic centimeters of blood.

One hundred cubic centimeters of the alcoholic extract from the serum of the nephrectomized dog was evaporated to dryness. This was redissolved in 95 per cent alcohol and filtered. The filtrate was again evaporated and redissolved, and the process of filtration and evaporation was repeated five times. Finally, the dry substance remaining was dissolved in 10 cc. of physiologic sodium chloride solution. This solution did not give a biuret test for protein and yielded a strongly positive diazo reaction. It was injected intravenously and without any manifestation of toxicity into a normal rabbit. It would thus appear that the diazo-reacting substance in large dosage is not toxic to a normal rabbit, and certainly in an isolated experiment did not produce symptoms in any way resembling the clinical picture of uremia.

In one patient with a positive blood diazo reaction, the test was performed on the spinal and ascitic fluid. The reaction was negative in the spinal fluid, but positive in the ascitic fluid. Spinal and ascitic fluids from other cases whose bloods gave negative diazo reactions were entirely negative.

TABLE 3.—*The Diazo Reaction in Nephrectomized Animals*

	Date	Blood Nonprotein Nitrogen, Mg. per 100 Cc.	Diazo Reaction	Comment
1. Dog.....	Oct. 19, 1925	72	Negative	Blood drawn immediately after nephrectomy; ether anesthesia
	Oct. 20, 1925	200	++++	
	Oct. 21, 1925	350	++++	Animal killed
2. Rabbit...	March 5, 1926	47	Negative	Blood drawn immediately after nephrectomy; ether anesthesia
	March 6, 1926	105	Negative	
	March 7, 1926	145	++++	
	March 8, 1926	257	++++	Animal killed

In brief, these observations suggest that while the diazo-producing substance may be found in the blood of uremic patients and nephrectomized animals and is readily diffusible, it is not highly toxic and probably bears only a casual relation to any specific substance causing the clinical picture of uremia.

SUMMARY

Clinical observations show the value of the blood diazo test in the prognosis of chronic nephritis. The test is quickly and simply performed and is positive only in cases of advanced renal insufficiency. It is a test of practical value, being a quick step toward a differential diagnosis between uremic coma and coma of other than renal origin; it is a test of clinical significance as its presence is always an ominus sign, suggesting a short span of life for the patient. In our experience, the test has not been positive in any nephritic case with a normal phenolsulphonphthalein excretion, though it may develop before there is any significant blood nitrogen accumulation. On the whole, it appears to be a valuable adjunct to the various renal function tests now generally used, and is particularly to be recommended because of its simplicity and rapidity of performance.

The substance causing the diazo reaction seems to be a substance normally formed in metabolism but appearing in the blood in sufficient concentration to be recognized only when the renal path of elimination is abnormal. It is a readily diffusible compound, not highly toxic, and, though found in the blood of patients with marked renal insufficiency, it does not appear to be the etiologic factor causing the clinical state of uremia.

INTRACRANIAL COMPLICATIONS OF FRACTURE OF SKULL INVOLVING FRONTAL SINUS*

FRANK R. TEACHENOR, M.D.
KANSAS CITY, MO.

A recent series of fractures of the skull involving the frontal sinus brought to my attention the amazing frequency of intracranial complications from this source, and likewise the pleasing success of prompt surgical drainage in the prevention of these complications.

In the last three years at the Kansas City General Hospital, where a large series of cranial injuries are handled annually, there have been ten deaths from intracranial infection following trauma. These resulted from fractures of the skull involving the following paranasal sinuses: frontal sinus, six; ethmoid sinus, one; sphenoid sinus, one, and mastoid and middle ear, two.

Although not of common occurrence, in my experience fractures involving the frontal sinus have been the source of intracranial infection with greater frequency than in all other fractures of the skull combined. I have also noted that the fractures involving the frontal sinus have been from extensions of fractures of the vault of the skull, rather than from fractures of the base.

Basilar fractures have always been considered grave, one reason being that basilar fractures are frequently compound by involvement of the paranasal sinuses. Basilar fractures following a transverse meridian frequently involve the middle ear and the mastoid, ethmoid and sphenoid sinuses. Those passing along the longitudinal meridian involve the petrous bone and the ethmoid and sphenoid sinuses, but usually pass lateral to the frontal sinuses and rarely involve them.

Fractures of the vault of the skull usually include both tables of the bone. The fracture of the outer table passes through the anterior wall of the frontal sinus. Fracture of the inner table passes through the posterior, or inner, wall of the sinus. It is the fracture of the posterior, or inner, wall of the frontal sinus that is of importance, as it forms a compound fracture and exposes the cranial cavity and contents to infection. In one of my cases, the inner wall of the sinus was fractured without involvement of the outer wall.

When a fracture of the inner wall of the sinus exists, two factors combine to render intracranial infection almost inevitable.

First, hemorrhage from the line of fracture in the sinus wall fills the frontal sinus with blood. The blood then flows through the frontal duct into the middle fossa of the nasal cavity. Here the blood tends to obstruct the nasal passages and causes irritation of the sensitive mucosa. The patient reacts by blowing the nose, sneezing, or other increased respiratory effort to clear the nasal passages. All of these reactions tend to increase intranasal pressure and force infective material under pressure into the frontal sinus and through the fracture into the cranial cavity. I believe this to be an important factor in the transmission of the infection.

Second, a blood clot forms within the frontal sinus. This clot becomes infected from the nasal cavity, or from latent infection existing within the sinus itself. By ball valve action of the clot, or by infection and

* Read before the Western Surgical Association, Duluth, Minn., Oct. 15, 1926.

swelling of the sinus mucosa, the nasal duct becomes occluded. With the frontal duct occluded, inflammatory reaction within the sinus soon increases the intrasinus pressure and forces infection through the fractured sinus wall into the cranial cavity.

Fortunately, the frontal sinus is readily accessible, and both of these factors may be controlled by prompt surgical drainage.

The operation required is very simple and can be done in a few minutes under local anesthesia. After proper surgical preparation, an incision is made starting at the root of the nose and continued laterally for a short distance in the eyebrow so as to expose the anterior-inferior wall of the affected frontal sinus. The wall of the sinus is perforated by a drill or chisel and enlarged to about 1 cm. in diameter. The opening into the sinus need be only large enough to remove the blood clot and control hemorrhage within the sinus. In cases in which cerebrospinal rhinorrhea is present, or cerebrospinal fluid is found in the sinus, the opening in the anterior wall of the sinus must be enlarged sufficiently to enable one to remove the inner sinus wall and locate and suture the laceration in the dura. A small rubber tube is used for drainage, and placed so that the lumen of the tube is directly over the frontal duct leading into the nasal cavity. This conducts any air forced into the sinus from the nasal cavity through the tube to the exterior. If gauze packing is required to control oozing, it should be placed so as not to cause interference with this function of the drainage tube. The incision is then closed about the tube, and packing and dressings are applied in such a manner as to permit free passage of fluids and air from the tube. The packing is removed in twenty-four hours. The tube is permitted to remain in place for one week and kept freely open during this time.

Undoubtedly, similar conditions and reactions exist in fractures involving the ethmoid and sphenoid sinuses. Unfortunately, they are anatomically situated so as to be inaccessible for similar treatment. To remove the clots and establish free drainage from these sinuses, under the conditions found in such trauma, would be fraught with the greatest difficulty, if not impossible. It might, however, be possible to diminish the dangers of increased intranasal pressure by drainage of the frontal sinus. This is particularly true of the anterior ethmoid sinuses. The duct of the anterior ethmoid cells enter the nasal cavity in the infundibulum along with the duct from the frontal sinus. Drainage of the frontal sinus may be of assistance in fracture of the anterior ethmoid cells by offering an exit for air forced into the infundibulum during sneezing and straining. Although to a lesser degree, it may be of assistance in fractures involving the posterior ethmoid and sphenoid sinuses. However explicit instructions may be, it is difficult to prevent these patients from "blowing" the nose.

Nature frequently handles the situation in a similar manner in fractures of the petrous portion of the temporal bone, involving the middle ear and mastoid, by traumatic perforation of the tympanic membrane. This permits an exit for blood and air forced from the nasopharynx through the eustachian to the middle ear. I have on several occasions noted air escaping through the external auditory canal when these patients sneezed or strained.

For the sake of contrast, I have divided my sixteen cases of fractures of the skull involving the frontal sinus into two series of eight cases each. In the first series there were three operations, but they were done after the onset of the complications. In the second series prompt operation was done in each case as a preventive measure.

In the first series of eight patients, there were seven deaths. Two died from brain injury accompanying fracture; one of intradural frontal abscess; one of extradural abscess and meningitis, and three of meningitis. In one case of cerebrospinal rhinorrhea the patient recovered.

In the second series of eight patients, there were three deaths. Two died from brain injury accompanying fracture, and one of meningitis; five recovered without intracranial complications.

In the first series the gross mortality was 87.5 per cent; 25 per cent was from brain injury accompanying the fracture of the skull, and 67.5 per cent resulted from intracranial infection; 12.5 per cent recovered. The patient that recovered had a cerebrospinal rhinorrhea of three weeks' standing when he entered the hospital. The rhinorrhea ceased three days later. The three deaths from meningitis were in patients who entered the hospital after the onset of the meningitis. One of these patients died twenty-nine hours after the injury with a very cloudy spinal fluid containing pneumococci. The patient with the extradural frontal abscess died of pneumococcic meningitis three days after the abscess was drained through the frontal sinus. The patient having the intradural, frontal lobe abscess made an apparent recovery as far as the frontal lobe abscess was concerned, but developed pyemia and died ten weeks later with multiple abscesses.

In the second series all the patients had prompt frontal sinus drainage. The gross mortality was 37.5 per cent; 25 per cent was from brain injuries accompanying the fracture of the skull, and 12.5 per cent from intracranial infection. The one death from meningitis was the result of delayed operation. In this case the frontal sinus was drained thirty-six hours after the injury. Spinal fluid withdrawn before the operation was macroscopically clear, but the laboratory report received following the operation disclosed a cell count of 400 and the presence of pneumococci. The remaining five patients recovered without intracranial infection. In this series the recoveries equaled the mortality from intracranial infection in the first series, 67.5 per cent.

The death from meningitis twenty-nine hours after injury, and the failure to save the patient by operation thirty-six hours after injury, illustrate the necessity of early diagnosis and operation.

Epistaxis is the one constant symptom, and in one of my cases was the only subjective sign. Usually there is some ecchymosis in the region of the frontal sinus, at the root of the nose or about the inner canthus of the eye. In severe injuries there are gross signs of trauma. Roentgenograms are invaluable, and it is with them that the final diagnosis is made. In addition to the line of fracture, the roentgenogram frequently shows marked opacity of the affected sinus as a result of blood in the sinus.

Although none occurred in my series, fractures involving the frontal sinus are the most frequent sources of pneumocephalus, or accumulations of air in the cranial cavity. Roentgenograms are the only method of diagnosis of this condition. Dandy,[1] after a thorough search of the literature, accumulated reports of twenty-five cases of pneumocephalus, and reported three of his own. Of the twenty-eight cases, eighteen

1. Dandy, W. E.: Pneumocephalus, Arch. Surg. 12: 949 (May) 1926.

were from fractures involving the frontal sinus. I believe that insufficient stress has been put on the seriousness of fractures involving the frontal sinus.

SUMMARY

Fractures involving the frontal sinuses are frequent sources of grave intracranial complications.

Air and infection forced into the frontal sinus from the nasal cavity during sneezing or straining are important factors in the production of these complications.

Early diagnosis and drainage of the sinus are essential.

In addition to drainage of the sinus, a free exit must be provided for air forced into the sinus from the nasal cavity. In cases of cerebrospinal rhinorrhea or pneumocephalus the dural laceration should be sought and closed.

1002 Argyle Building.

A METHOD FOR THE CURE OF URINARY INCONTINENCE IN THE MALE

PRELIMINARY REPORT *

LIONEL P. PLAYER, M.D.
AND
C. LATIMER CALLANDER, M.D.
SAN FRANCISCO

A variety of surgical methods have been advised for cure of urinary incontinence. C. L. Deming,[1] in a recent article, reported an ingenious operation for the cure of incontinence in the female. He successfully utilized a transplanted gracilis muscle to encircle the

Fig. 1.—Operative fields in the perineum and the thigh.

urethra, thereby giving to the patient for the first time satisfactory urinary control.

Having a male patient suffering from urinary incontinence following suprapubic prostatectomy, it occurred to us to employ a gracilis transplant in an endeavor to effect a cure.

* From the University of California Medical School, Department of Urology and Surgery.

1. Deming, C. L.: Transplantation of the Gracilis Muscle for Incontinence of Urine, J. A. M. A. **86**: 822 (March 20) 1926.

REPORT OF CASE

W. H., a man, aged 64, entered the San Francisco Hospital, Jan. 3, 1924, with a diagnosis of atrophic prostate, and a history of difficult urination, frequency, and residual urine of 120 cc. After various functional and urologic tests, a suprapubic prostatectomy was performed. Immediate convalescence was uneventful, the wound completely healing by the fourteenth day. He was discharged twenty days after the operation with a slight incontinence. The incontinence increased until ultimately the patient was compelled to wear a rubber urinal. Local treatment and control exercises did not improve the situation.

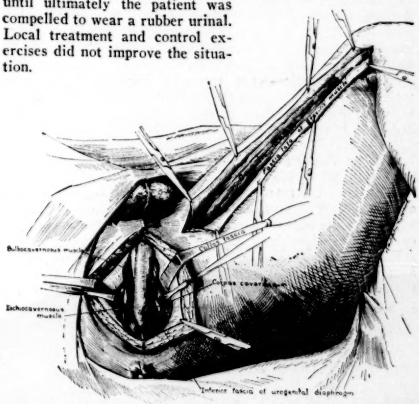

Fig. 2.—Dissections of the superficial perineal compartment and the gracilis muscle.

The patient was readmitted to the hospital, October 29, in an endeavor to teach him better urinary control and to clear up the bladder infection. These efforts failed, and Jan. 2, 1925, a suprapubic operation was performed which consisted briefly of an attempt to repair the injured internal sphincter. The operation resulted in a sloughing of the tissues repaired, which left the patient in a worse condition than before.

July 21, a second suprapubic attempt was made to repair the so-called internal sphincter as a preliminary procedure to a perineal section, at the same sitting, for the purpose of repairing the external sphincter. The repair of the internal sphincter was unsuccessful owing to the sloughing of devitalized tissues, and the external sphincter control heretofore present to a large degree was thenceforth lost.

The patient entered the hospital for the fourth time, April 1, 1926, for a third attempt to cure the incontinence. Our purpose on this admission was to apply a new method for the cure of incontinence in the male, the plan of procedure being inspired by the work of Deming in the female. The technic applied in this case we developed on cadavers and is as follows:

METHOD OF OPERATION

The method in general consists in encircling the corpus cavernosum urethrae with the terminal portion of a transplanted gracilis muscle, the encircling to be done as close to the membranous urethra as possible. The operation will be described as consisting of three stages: (*a*) a perineal exposure, through the midline, of the corpus cavernosum urethrae with a blunt-dissection isolation of that structure; (*b*) a thigh incision to isolate the gracilis muscle with the conservation of the main proximal blood and nerve supply; (*c*) a combined thigh and perineal maneuver, which consists in encircling the corpus cavernosum urethrae with its contained cavernous urethra as near the urogenital diaphragm as possible with the terminal or distal portion of the transplanted gracilis muscle. The patient is placed in the extreme lithotomy position, preparation of the field including not only the perineal region but the entire thigh and knee on the side on which the gracilis is to be used.

The Superficial Perineal Procedure.—A median perineal incision is carried from a point well up at the root of the scrotum to a point about on a level with the central tendon of the perineum. It is carried in depth through Colles' fascia, and exposes the entire corpus cavernosum urethrae covered by the bulbocavernosus muscle. The superficial structures, including Colles' fascia, are widely retracted until all the contents of the superficial perineal compartment are exposed, the structures plainly seen being the corpus cavernosum urethrae, as well as the corpora cavernosa penis and the muscles covering them, and the superficial or the inferior leaf of the urogenital diaphragm. At the lower or posterior part of the incision, the superficial transverse perineal muscles are visible. The bulbocavernosus muscle is incised in its median raphe, and its symmetrical portions are retracted laterally. The lateral retractors now expose the corpus cavernosum urethrae as well as the inferior leaf of the urogenital diaphragm. The perineal artery, a branch of the internal pudic artery which supplies the superficial perineal compartment, may or may not be ligated as it passes over the superficial transverse perineal muscle on either side.

With the contents of the superficial compartment well exposed, blunt dissection is carried out for the purpose of separating the corpus cavernosum urethrae with the contained cavernous urethra from its loose attachment to the inferior fascia of the urogenital diaphragm. This is accomplished by a spreading clamp dissection until it is well separated from the inferior fascia for a distance extending from an anterior point at which the corpus joins the two corpora of the penis to a posterior point at which the cavernous urethra enters the urogenital diaphragm. The interval between the corpus cavernosum urethrae and the

Fig. 3.—Gracilis muscle withdrawn, showing its vascular and nerve supply, ready to transplant about the isolated corpus cavernosum urethrae.

inferior fascia easily holds one's two fingers. This step completes the perineal exposure of the structures used in the operation.

Thigh Portion of Operation.—With the patient still in the exaggerated lithotomy position, an incision is carried over the gracilis muscle from about 6 cm. distal to its origin at the anterior margin of the lower half of the symphysis pubis in the direction of and to the medial condyle of the femur. It is carried down to the deep fascia which covers this muscle and forms its fibrous compartment. Its enveloping or deep fascia, derived from the fascia lata of the thigh, is incised over the length of this incision and the muscle exposed throughout. There are not any attachments between the muscle and the enveloping fascia, so that it is seen to lie in its fibrous compartment and is easy of access and withdrawal.

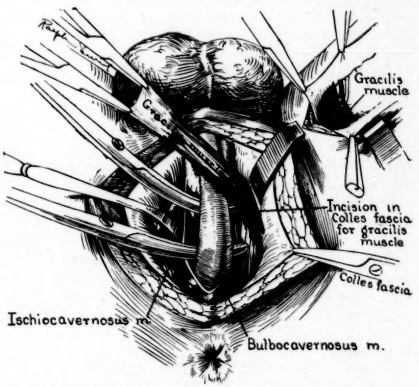

Fig. 4.—Gracilis muscle about to be transplanted about the corpus cavernosum urethrae.

Its main nerve supply is from the anterior division of the obturator nerve, and it derives its arterial supply from the obturator artery and the internal circumflex branch of the profunda femoris artery. These nerves and arteries enter the muscle on its dorsal side at a point very close to its origin.

The muscle is severed transversely in its tendinous portion at a level with the mesial condyle of the femur, and dissected upward until its nerve and blood supply are seen entering the muscle in its proximal fifth. This freeing of the muscle, ready for its use as a constrictor for the corpus cavernosum urethrae, is the last step in the thigh procedure.

Combined Perineal and Thigh Procedure.—At this stage, a passage for the transplanted gracilis is tunneled subcutaneously, a bridge of intact skin being left between the perineal and thigh incision, beneath which the distal end of the gracilis muscle, folded on itself, is brought into the superficial perineal compartment. The distal end of the muscle is drawn by clamps under the corpus cavernosum urethrae in the artificial space between it and the inferior sheath of the urogenital diaphragm, and is pulled to the estimated proper tension. It is now sutured with catgut sutures to the two corpora cavernosa penis at their point of contact for support, and the free extremity is rolled over the corpus cavernosum urethrae and sutured to itself. Both the perineal and the thigh incisions are closed in tiers without drainage, in the hope of securing primary healing.

RESULT OF OPERATION

The sutures and catheter were removed April 8, at which time the patient stated he could control his bladder. He awoke to void for the first time since his first repair operation.

May 6, he could control urine completely when in bed, but occasionally dribbled when being up or ambulatory for two hours. The wound being healed, we attributed this daytime leakage to the pulling loose of the transplanted muscle due to the absorption of the ligatures. We determined to reopen his wound and resuture with linen.

May 7 he was taken to the surgery again, and on opening the perineal wound, we found the gracilis muscle viable, healthy and of normal size. Its loop about the corpus cavernosum urethrae was maintained but loosely, because of the absorption of the chromic catgut which united the muscle to the penile corpora.

It was remarkable to what extent the corpus cavernosum urethrae had diminished in size. Finding the muscle somewhat retracted, we undid the loop and split its termination in such a fashion as to allow us to weave it about the corpus cavernosum urethrae and anchor the two split ends to the opposite penile crus. Enough tension was applied to enable him, in our opinion, to constrict voluntarily the urethra about which the muscle was woven. The patient was confined to bed after the second sitting a longer time, to avoid undue tension on the sutures the better to promote scar formation.

August 17, 1926, the patient had perfect continence at night; in fact, he has had it since the performance of the operation we are describing. He has now been ambulatory since July 18, during which time he has not had any dribbling for periods ranging from two to six hours during the day. He has been

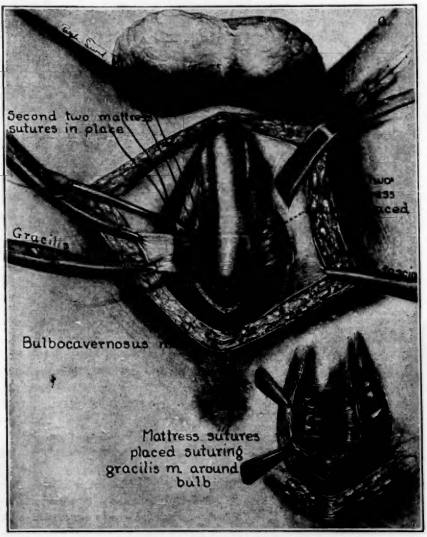
Second two mattress sutures in place
Gracilis
Bulbocavernosus
Mattress sutures placed suturing gracilis m. around bulb

Fig. 5.—The transplanted gracilis muscle in place and sutured.

able to void amounts measuring from 180 to 500 cc. As the patient tires, which he does at varying intervals, his control becomes less secure, and he is occasionally obliged to become recumbent to regain control.

COMMENT

Whereas this patient was totally incontinent prior to this operation, he now has perfect urinary control for an average of seven waking hours and eight sleeping hours. We estimate that he has between 65 and 75 per cent urinary control. He is relieved from the embarrassment of enuresis and the discomfort of wearing his rubber urinal at night. The continence during his waking hours is about in direct proportion to his physical fatigue, so that we have reason to believe that as the patient grows stronger his percentage of continence will increase.

In connection with this case we must consider certain facts peculiar to this patient, all of which were substantial obstacles in the way of his favorable progress. Most important of these was his poor general condition due to advanced age, and a series of serious operations which tended greatly to reduce the resistance of the tissues in the operative field.

The present cystoscopic and endoscopic observations are of considerable interest. That there is no residual urine has been demonstrated on several occasions. There is distinct voluntary contraction in the transplanted muscle, as evidenced in instrumentation. Moreover, he may be seen through the endoscope voluntarily to contract and relax the transplanted gracilis muscle throughout its transplanted width. In this connection might be mentioned the following incident as a note of clinical interest: In passing a number 16 soft rubber catheter, the orderly did not notice any difficulty in entering the bladder but experienced trouble in attempting to remove it. Although using considerable pulling force to withdraw it he was unable to do so, and while he was still in a quandary as to whether he should leave it alone or use more force, the muscle relaxed and the catheter came out practically of its own accord. This shows the gripping power of the transplanted viable muscle.

240 Stockton Street.

TROPHIC DISORDERS OF CENTRAL ORIGIN

REPORT OF A CASE OF PROGRESSIVE FACIAL HEMIATROPHY, ASSOCIATED WITH A LIPODYSTROPHY AND OTHER METABOLIC DERANGEMENTS *

H. G. WOLFF, M.D.
AND
ALFRED H. EHRENCLOU, M.D.
NEW YORK

We have reviewed the literature of the syndrome known as progressive facial hemiatrophy to determine the incidence of associated and apparently correlated abnormalities in other parts of the body and in other organ systems. We have found that such combinations are commonly reported. A case presenting progressive facial and tongue hemiatrophy, in addition to widespread metabolic disturbances, is here described and discussed with relation to the general physiology. Emphasis is placed on an hypothesis indicating that progressive facial hemiatrophy is only a part of a general autonomic imbalance, resulting from deranged central trophic control.

Trophic disturbances are essentially evidence of alterations in the complex local tissue metabolism. These alterations may have their etiology in pathologic changes at various sites. The peripheral type of derangement may be considered under three headings: the mechanical, the chemical and physical, and those disturbances due to injury to nerve fibers.

Circulatory defects from faulty cardiac function are a common type of mechanical defect. Circulatory defects and trophic lesions are also noted in chronic vascular disease with or without cardiac dysfunction. Examples are seen in thrombo-angiitis obliterans, venous stasis (varicosities) and lymphangitis.

Various types of burns, such as those from the roentgen ray, resulting in tissue degeneration are among the examples of trophic lesions from physical insult. Diabetes may present ulcerations, presumably on the basis of altered chemical relationships in the tissues,

* From the neurologic department of Bellevue Hospital, service of Dr. Foster Kennedy, who has given us permission to publish a report of this case.

since they disappear when the blood sugar returns to a normal level.

The trophic lesions from injury and infection (leprosy) of the nerve bundles probably result from their effect on the autonomic fibers. Causalgias and segmental nerve lesions often end in tissue wasting, excessive fatigability and ulceration. The intermittent claudication of advanced arteriosclerosis may be due to irritation of the periarterial sympathetics and resulting vasoconstriction because of inadequate oxygenation of the blood in the vasa vasorum.

Spinal trophic disorders have a common example in the joint diseases of the Charcot type and in the many lesions of syringomyelia. The skin lesions seen in herpes and tabes (mal perforant) probably have their seat of origin here. Tissue wasting, such as is seen in muscles in advanced tabes, is thought to arise from degenerative changes in the spinal ganglions, dorsal roots or lateral horn cells. Wasting of muscles about diseased joints, as a result of constant local aberrant afferent impulses, may be similar examples. The loss of "tone" and the ready fatigability of muscles after ramisection are also thought to be evidence of nutritional alteration in muscles so supplied.[1]

Fig. 1.—Atrophy of left side of face, with loss of substance of the muscle, fat and skin.

It seems probable that there is still a higher integrative level of control of nutritional function, and it is to this type of trophic disorder that we call attention. Recently one of us[2] reviewed the evidence of autonomic imbalance in gastroduodenal mucous membrane erosions in higher vertebrates. It would appear that it is possible, by producing alterations in autonomic tonus at various places, to cause structural changes in the mucous membrane of this system. Similarly, trophic derangements of central origin are seen following infections of the central nervous system.

We have seen, with Dr. W. M. Kraus, a case with postencephalitic sequelae. A man, aged 24, had had for two years wasting of the right side of the body, with stiffness, loss of coordination, and excessive fatigability. A "masked" facies had recently developed. In addition, the patient had a short period of altered water metabolism (diabetes insipidus) and grew 2 inches within a few months. In three recent cases we have seen syndromes following encephalitis that further indicate the probability of impairment of central trophic control; one with a parkinsonian syndrome, diabetes insipidus and obesity, and the other two with profound alterations in the respiratory rhythm.[3]

Alterations in all forms of autonomic function, as well as tissue structure and emotional and metabolic changes are common enough sequelae of encephalitis. The loss of heat regulation after experimental brain stem section is a more readily studied objective evidence of trophic control in this area.

These cases are mentioned because they emphasize a feature that seems significant in a discussion of progressive facial hemiatrophy. It may be safely stated that, although encephalitis is a widespread disease, the major pathologic changes take place in the brain, especially about the third ventricle, midbrain and basal ganglions. Since the early days of this disease, we have discontinued viewing these cases as isolated, unrelated clinical syndromes, and grouped them as postinfectious, trophic or vegetative derangements of central origin.[4] We look on progressive facial hemiatrophy as a similar type of disorder of unknown etiology. The major portion of the literature on progressive facial hemiatrophy has treated the syndrome as though it were a definite disease entity. With the vast literature and the experience of encephalitis as a background, it is our aim to dispel this concept and to demonstrate that progressive facial hemiatrophy is merely a variable, inconstant although dramatic element of a syndrome that may involve far more significant changes in other parts of the organism. Purves Stewart[5] thus describes progressive facial hemiatrophy:

> This disease, which commences in early life, usually before puberty and more often in females than in males, shows itself first in the skin of the face, either near the orbit or over the upper or lower jaw, gradually spreading over the whole face on one side. The skin becomes thinned from atrophy of its papillary layer, the fat disappears, and thus the affected side of the face becomes wrinkled and furrowed, in marked contrast with the healthy side. Later, the subjacent muscles, cartilages and bones become atrophied, but without motor paralysis or reaction of degeneration. The corresponding side of the tongue and occasionally that of the soft palate also become wasted. The hair on the affected side of the face may fall out or become white, and the sebaceous glands may atrophy. The scalp is rarely affected. There is no anesthesia.

Stewart states that Mendel found signs of neuritis of the fifth nerve, together with changes in the spinal root of the fifth nerve within the medulla. He also quotes Loebl and Wiesel, who found interstitial neuritis of the gasserian ganglion and of the parts distal to it. Removal of the gasserian ganglion does not result in hemiatrophy.

Wartenberg[6] has reviewed the recent literature of this disease. His collection includes cases which have, in addition to the progressive facial hemiatrophy, changes in the skin (scleroderma), hair (alopecia), fat (wasting), bone (atrophy), brain (degeneration), and vasomotor dysfunction. Scleroderma associated with progressive facial hemiatrophy has also been reported by Levin[7] and others.[8]

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We present here a case showing progressive facial hemiatrophy and, in addition, several unusual signs and symptoms not previously mentioned in the reported cases. We emphasize these not primarily because they are unique and associated with progressive facial hemiatrophy, but because they add further facts on the nature of the syndrome of which progressive facial hemiatrophy may be only one of the signs.

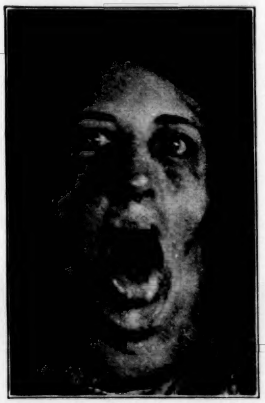

Fig. 2.—Atrophy of left half of tongue; protrusion in midline.

REPORT OF CASE

E. W., a single woman, aged 40, a clerk, entered the hospital complaining of (1) loss of substance of the left side of the face and tongue, (2) exquisite tenderness, especially about the extremities, (3) periods of emotional instability and depression and (4) increase in weight. The family history was irrelevant. Her previous history was also irrelevant (measles, mumps and typhoid in childhood). There were no "nervous spells" previous to the present illness.

Beginning eight years before, the patient had noticed a gradual painless loss of substance on the left side of her face. Subjective sensations of any description were not noted. About four years before, she began having "rheumatic pains," for which she continually sought medical aid. These pains and "sore feelings" were not limited to the joints but were also felt in the soft parts. They included all parts of the body, but the ankles, calves, knees, thighs and hips were especially troublesome. The weight of a pencil, when writing, caused considerable discomfort in the hands. The weight of the bedclothes caused great discomfort in the legs. These "aches and pains" were more or less constant, but were especially marked at the time of menstruation. She complained that ecchymoses occurred after very slight injuries. During the last four years she became increasingly "nervous," so that any slight environmental stimulus or slightly irritating influence caused her to become greatly disturbed. She had "spells" of depression, weeping, excitement and trembling. During the last four months, these had become more frequent, more severe and of longer duration. During such periods there was pronounced prostration and it was frequently necessary for her to take to her bed. Between these "spells" she was weak out of all proportion to her apparent expenditure of effort. She was excessively fatigable. She was always very light in weight in her early years. Three years before she had gained 40 pounds (18 Kg.) (from 120 to 160 pounds, or 54.4 to 72.6 Kg.) within six months. This increase in weight was chiefly distributed about the lower extremities and hips; an increase in flesh was not apparent to the patient in the upper extremities, neck, shoulders and chest; the breasts did not become larger. Her habits were regular; menstruation was regular and uneventful, except for some accentuation of the symptoms during the period. She slept poorly.

Physical examination showed the head, chest, abdomen and extremities to be essentially normal, with the following exceptions: The atrophy of the face was as shown in the accompanying illustrations. There was definite loss of substance of the muscle, skin and fat on the left side of the face. The eye appeared normal, and vision was not impaired. Sweating was possibly slightly less on the left side, and the skin was more dry, less oily and more firm. The bones of the left side of the face appeared and felt smaller. The tongue on the affected side (left) was very striking in appearance. It was tremulous and atrophic, although there was not inability to move it and it did not interfere with proper enunciation. It was, as is usual in these cases, protruded in the midline. Taste was unimpaired, and sensation of the tongue and face was normal. The texture and color of the hair were not altered. The skin over the remainder of the body was firm, dry, slightly shiny and slightly stiff, suggesting scleroderma. The fat was unevenly distributed but was not excessively deposited anywhere. The lower extremities were heavy and the buttocks quite large, whereas the breast and shoulders were small. At the time of examination, the soft parts were exquisitely sensitive, as described by the patient, and pressure anywhere, even over the thinly covered knuckles, caused pain. During her stay in the hospital, the sensitiveness persisted, varying in intensity, and was now apparent in the fatty parts. Ordinary pin-prick or hypodermic injections were also exquisitely painful. The superficial and deep reflexes were not altered. There was a fine tremor of the hands on extension. The patient cooperated perfectly during the examinations and stay in the ward, although she was constantly apprehensive, anxious and frequently depressed and agitated. She complained, when questioned, of a feeling of exhaustion, and, during the more severe periods of prostration, remained in bed, often weeping. Any break in the ward routine or extra activity resulted in prostration. She was very pleasing and helpful to the other patients and aided in the ward work. She seldom expressed her complaints or feelings unless questioned.

The laboratory tests showed: urine normal, and blood Wassermann reaction negative. The red blood and white blood corpuscles were normal; the differential count was

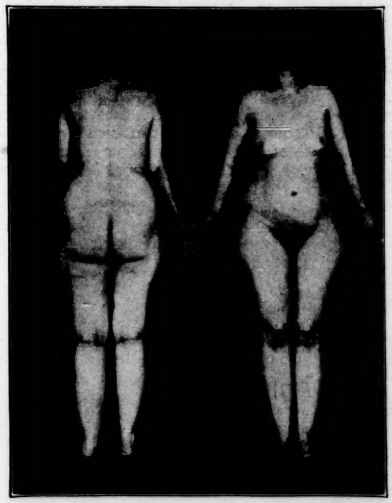

Fig. 3.—Distribution of excess fat on buttocks and hips.

normal. Roentgenograms of the head suggested a slight and indefinite atrophy of the bone on the left side; abnormality about the sella was not noted. The extremities were normal. The basal metabolic rate was + 18. Histologic studies of the fat and muscle revealed nothing, although special stains were not used.

There were several important negative observations: There had not been any acute infection; evidence of diabetes insipidus or altered water metabolism was lacking in the history or laboratory determinations at the time of entrance to

the hospital; increase in height or size of bones was not noted; motor disturbances, except weakness could not be elicited; proprioceptive alterations were not observed; pathologic changes of the hair on the left side of the head were not seen, and convulsive seizures were absent.

COMMENT

This case presents, besides the hemiatrophy of the facial soft parts and bone, hemiatrophy of the tongue, a disturbance of fat metabolism, a slightly altered basal metabolism, a perversion of sensation and a peculiar affective state. It is possible that the affective disorder arises from a flood of perverse afferent sensations from disease of the sensory nerve endings. Derangement at the terminal of all afferent sensation, namely, the thalamus, might also explain it. In view of the other thalamic neighborhood phenomena, this possibility is not extremely remote. The general imbalance is, we believe, suggestive evidence of a pathologic change in trophic control at higher levels (brain stem, mesencephalon, third ventricle). Wartenberg suggested the possibility of an "encephalitic" infection or toxin involving this area directly or indirectly, through the effects of disease on the vasomotor apparatus. The diseased gasserian ganglion and trigeminal nerve lesion mentioned by Stewart are not out of harmony with this conception, for central changes might cause distal degeneration. The work of Bailey and Bremer [9] and the association of adiposis dolorosa with pituitary dystrophy and the subsequent polyglandular dysfunction [10] make it seem as though the pathologic process in our case also involves the area about this gland. Kraus' [11] case of lipodystrophy (showing areas of fatty loss and excessive fatty deposit) further indicates that some center concerned with segmental fat metabolism has been involved. The various skeletal "hypertrophies"—unilateral, local or general—are probably a similar and correlated manifestation of disease or dysfunction in these regions.

From the literature and in our own case, it thus seems clear that the progressive facial hemiatrophy is only a small part of a general disturbance. This conception seems to us the simplest, and the one most in harmony with the observed facts. It explains the unusual combination and, above all, it correlates a group of seemingly disconnected clinical phenomena.

SUMMARY

1. From the literature and the observations on the case here presented, it is apparent that the unilateral wasting of the tissues of the face is merely the outstanding feature of a general disturbance.

2. An hypothesis suggesting that progressive facial hemiatrophy is a part of a syndrome of a general autonomic imbalance resulting from deranged central trophic control is worthy of emphasis.

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Curriculum Making.—It is easy to make changes. There are many who delight in any kind of change, and feel that they are making progress when they are making changes. But merely shifting position is not necessarily progress. There are more ways of going wrong than of going right. The status quo is usually better than changes in the wrong directions. Curriculum making must find guiding principles which will lead it with all the certainty that is possible in right directions.—Bobbitt: How to Make a Curriculum, p. 7.

DISTURBANCES OF THE METATARSAL ARCH

PHILIP LEWIN, M.D.
Associate Professor of Orthopedic Surgery, Northwestern University Medical School
CHICAGO

The subject of metatarsal arch disturbances is attaining the increasing importance it deserves. For a long period it was a general conception that nearly every condition occurring in this region was a "Morton's toe," named after the Philadelphian who described it in 1876. In 1889, Poullson of Lyons wrote on this subject. The term metatarsalgia, meaning pain in this region, is a symptom and does not describe the pathologic condition.

The anatomy of the metatarsal region is very important. The skeleton of these parts consists of the metatarsal bases, shafts and heads. The proximal phalanges and sesamoids are accessory structures often closely allied to metatarsal disturbances. The metatarsophalangeal joints are simple ball and socket joints surrounded by capsules lined with synovial membrane. Like other joints, therefore, they are subject to stress, strain, injury, growth disturbance and infection. The muscles of this region are the plantar and dorsal interossei, the lumbricales and the adductor hallucis. The tendons of this region are the flexors and extensors of the toes, the abductors and adductors, and the peroneus longus. The plantar fascia is a very important structure. The interdigital vessels and nerves at times demand especial consideration, particularly the latter. The skin of the plantar surface of this area is unusually thick.

Fig. 1.—**Freiberg's infraction of the metatarsal head; osteochondritis of the metatarsophalangeal joint.**

The chief functions of the metatarsal regions are to afford stability in locomotion, to permit spring and resilience to the step, and to relieve jars on the body, especially on the spine and the central nervous system.

The transverse arch is highest near the tarsometatarsal joints, and gradually lowers toward the metatarsal heads. This mechanical structure protects the nerves, vessels, muscles, tendons and ligaments of the sole from injury.

Fig. 2.—Case of metatarsalgia due to severe arthritis deformans; before operation.

Fig. 3.—Amputation of second toe resulting in metatarsalgia because an insufficient amount of bone was removed.

The transverse arch is maintained by the transversely directed dorsal, plantar and interosseous ligaments. The obliquely directed peroneus longus tendon and to some extent the expansion of the tibialis posticus tendon, which pull against each other from opposite sides, afford some support. When the transverse arch is properly maintained, the anterior pillar of the longitudinal arch rests on the heads of the first and fourth metatarsal bones only; that of the fifth also presses on the ground in many cases, especially when more weight is borne on the foot. If the transverse arch yields, the heads of the intervening metatarsal bones receive undue pressure and callosities develop under them. The lumbricales and interossei muscles fix the toes to the ground in walking and are important sustainers of the metatarsal arch. When these groups of muscles are paralyzed or weakened, the toes assume a position of "claw toe" and the normal gait is interfered with. Conversely, if the toes are forced to assume a position of clawing by any agent, such as improper shoes, these two groups of muscles are unable to function properly, and the unopposed action of the extensor muscles aggravates the clawing and forces the metatarsal heads to assume a depressed position. The transverse head of the adductor hallucis approximates all the toes, thereby increasing the curve of the transverse arch. Considered from the mechanical point of view, the metatarsal arch is curved in two directions, laterally and anteroposteriorly. What is usually referred to as the metatarsal arch is that structure formed by the metatarsal heads and is the true transverse arch. The metatarsal arch is that curved structure seen on the side or oblique view of the skeleton, extending from the tarsometatarsal articulations to the end phalanges or at least to the proximal interphalangeal joints.

The etiology of metatarsal disturbances is a varied subject. Very common in adult patients, metatarsalgia is comparatively infrequent in childhood, during which age period many of the cases are due to osteochondritis, a condition described by Freiberg as infraction of the metatarsal head. I have studied six cases. The cause is trauma to young growing epiphyses, which interferes with normal local circulation and growth (fig. 1).

Metatarsal troubles are more common in the female, undoubtedly the result of improper shoes and incorrect shoe fitting. Short stockings or the pulling of stockings too tight are additional factors. Heredity may be important, especially in the arthritic and pes cavus cases.

Arthritis is an important cause of metatarsalgia (fig. 2). Infections of various types contribute a fair share of these cases. The infection may be local or focal, such as infected teeth, tonsils, sinuses, and abdominal or pelvic structures. Toxemia, as from pregnancy or from an infection such as influenza, is a causative factor. Static disturbances, such as prolonged standing on hard floors or other surfaces, predispose to metatarsal disturbances. Traumas of various sorts are very important, such as the sprain or strain as seen in the chauffeur's foot or in the dancer's foot, especially in toe dancing. The trauma from shoes has been mentioned. Injury by falling objects or being stepped on by another person or animal may cause metatarsalgia. I have seen a nurse who developed

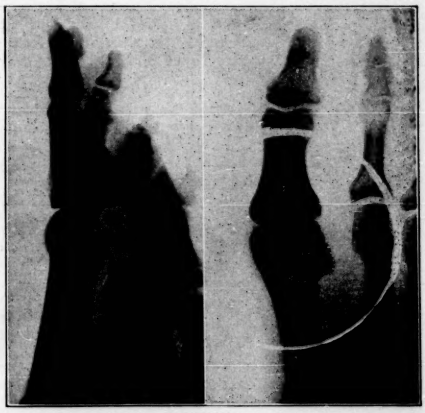


Fig. 4.—Split sesamoid producing metatarsalgia.

metatarsalgia following the accidental shooting off of all her toes. I have also seen a physician who had metatarsalgia following a septic infection of the metatarsal region as a result of the piercing of his shoe by an infected scalpel which dropped during an operation.

Amputation, bunion operations and hammer toe operations are frequently followed by metatarsalgia, often, however, present but unrecognized before operation. Fractures, dislocations and burns, both thermal and chemical, may result in metatarsalgia. Spastic paralysis, plantar fasciitis, paralgia hyperesthetica, and the following conditions are causes of metatarsalgia: pes cavus that is independent or coincident with spina bifida sometimes appearing at puberty; circulatory disturbances such as endarteritis; thrombo-angiitis obliterans; Raynaud's disease; causalgia; frostbite; chilblains; trench foot, and soft corns. I have seen several cases of incomplete amputation of the toes which resulted in very painful metatarsalgia (fig. 3).

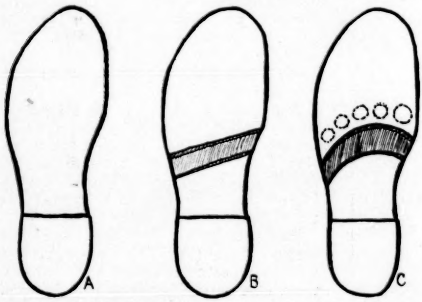


Fig. 5.—*A*, sole of proper walking shoe; *B*, position of leather metatarsal bar, usually three-eighths inch thick and 1 inch wide; *C*, position of metarsal crescent and relation to heads of metatarsals.

The pathology concerns the anatomic or mechanical consideration plus the infectious or toxemic factors. The anatomic considerations are depression or inversion of the arch, which normally is convex above. There results pressure on the interdigital nerves and relaxation of the capsules and ligaments. Periostitis of the metatarsal bone may be found. Bursitis in this region has been described by Royle and is occasionally encountered. Papillomas and soft corns (usually between the fourth and fifth toes) are common. The infectious factor is similar to that in any other joint.

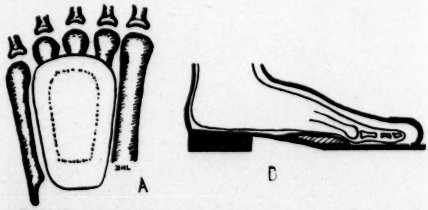


Fig. 6.—*A*, position of beveled felt pad with relation to metatarsal arch; *B*, position of pad in shoe.

The symptoms of metatarsalgia are pain, rigidity, and at times spasm of the extensor muscles and contractures of their tendons. The physical conditions of metatarsal depression are the inversion of the arch, callus formation, sensitiveness and tenderness, usually due to the periostitis of the metatarsal bones. Every schoolboy knows that it he can grasp another boy's hand, depress the knuckles and exert lateral compression he can cause pain. An analogous condition is found in a depressed metatarsal arch.

Roentgenograms are usually not necessary in making a diagnosis, although they are always desirable. A good history and careful examination are usually more valuable. Roentgenograms reveal the depression on lateral view, and also show bunions, "bunionettes" (exostoses of the fifth metatarsal heads) and the position and integrity of sesamoids (fig. 4), and occasionally reveal a case of metatarsophalangeal osteochondritis.

The prognosis depends on the pathologic condition and the cooperation of the patient in carrying out proper treatment. The course is often long.

The treatment of the usual type of metatarsalgia consists of local and general measures, the latter being removal of foci of infection and the correction of metabolic, hygienic and dietetic disturbances. The local treatment consists of relief from inflammation or irritation, proper shoes and shoeing, metatarsal support, and the physiologic restoration of power of the supporting structures of the arch.

Relief from irritation and inflammation may be accomplished by rest and relief from weight bearing. In the severe cases, rest in bed with the application of an anodyne lotion [1] is used in conjunction with fomentations and elevation of the feet.

Shoes must be of straight last, round toe, medium width shank and moderate height heel. The shank should be flexible or rigid, depending on an accompanying disturbance of the longitudinal arch. The fitting of the shoe is very important. Custom made shoes are often too short. The shoe may be modified by the addition or insertion of a metatarsal bar or preferably a crescent (fig. 5). Into the shoe there should be inserted felt pads properly shaped and beveled to support the depressed structures (fig. 6). This pad may be applied directly to the foot temporarily, secured by means of a resinous glue and strips of adhesive plaster or by means of a simple elastic metatarsal cuff, which in itself has some value in supporting the arch laterally (fig. 7). A laced leather cuff is preferred by some orthopedic surgeons. An adhesive compression band often affords considerable temporary relief.

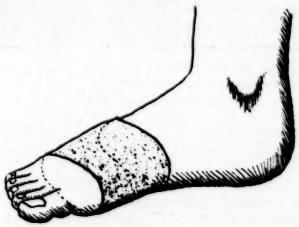


Fig. 7.—Position of elastic metatarsal compression binder.

The felt pad is usually inserted directly into the shoe, being secured by means of the glue and three small tacks. An insole is not essential. Because it is not physiologically correct to compress the delicate foot muscles between the rigid bones above and a rigid object

		Gm. or Cc.
1. ℞	Tincture of opium	30
	Diluted solution of lead subacetate	40
	Phenol, 0.5 per cent	50
	Hamamelis water	60

Mix and make a lotion.
Apply externally as directed.

below, I practically never use a metal plate to support a depressed metatarsal arch, depending entirely on the resilient support of the felt pad. The patient's hose should be long enough and must not be drawn too tight.

Massage of the feet twice daily with an anodyne ointment [2] is very valuable. Contrast foot baths afford the feet a very valuable tonic and are carried out as follows: Two buckets are obtained, each large enough to contain both feet. Bucket 1 is filled about two-thirds full of warm water, and bucket 2 two-thirds full of cool water. The patient should sit alongside the buckets, place both feet in the warm water for exactly one minute, and remove the feet and place in the cool water for exactly one minute. The feet should alternate in this manner for ten minutes, five in each bucket. This routine is carried out twice a day and the contrast gradually increased.

Fig. 8.—Line of incision for resection of metatarsal heads (Hoffman operation). Courtesy of Dr. D. H. Levinthal.

Special exercises are of the greatest value in increasing the power of the supporting structures and the flexibility of the metatarsal arch. Numerous exercises have been described and recommended. The following have been found of much value (each exercise is done with the bare feet twice daily).

1. DOOR STOP EXERCISE

Two old fashioned door stops, obtainable at the hardware section of one of the 5 and 10 cent stores, are prepared for use by removal of the rubber tips with a pair of nippers. Then they are screwed into a board about 14 inches long, 8 inches wide and 2 inches thick. The centers of the door stops should be 6 inches apart.

The board is placed on the floor, and the patient sits on a chair in front of it. Each foot is placed on a door stop with slight pressure *just behind* the metatarsal bones. On the count of 1 the toes are forcibly curled down, and on the count of 2 they are allowed to relax slowly. This is continued until one has counted 200. (This number should be attained gradually.)

2. TOWEL EXERCISE

The patient sits in a chair. A large hand towel is spread on the carpet, with the narrow edge facing the patient. Both feet are placed on the towel so that half of each foot is on the towel. The towel is grasped with the toes of one foot, then with the toes of the other. As the toes of one foot grasp, those of the other foot relax. This is carried out until the entire towel is under the feet.

3. GOLF BALL EXERCISE

A golf ball is placed on the rug and rolled under the metatarsal arch for one minute. Then it is picked up with the toes of one foot and placed under the toes of the other foot and the exercise is repeated for another minute. The patient alternates in this manner six times.

4. MARBLE EXERCISE

Marbles of various sizes are placed on a rug. The patient sits on a chair and picks up the marbles with the toes.

5. PENCIL EXERCISE

A round pencil is placed on a hard floor, and by means of the toes curled downward the patient pushes and pulls the pencil around the floor with short, quick movements.

		Gm. or Cc.
2. ℞	Methyl salicylate	4
	Salicylic acid	4
	Menthol	4
	Phenol	1
	Ointment of rose water	25
	Hydrous wool fat	25

Mix, make ointment, and put in collapsible tube.
Use externally, massaging by deep rotatory movement from five to ten minutes twice daily.

COMMENT

Diathermy, negative galvanism and sinusoidal current are helpful adjuvants in the treatment. Plaster-of-paris casts are frequently indicated in the treatment of metatarsalgia. Less frequently is operation necessary. The various operations in this region are tenotomy, tenodesis and tendon transplantations, such as the Jones or Sherman operations. Hoffman's operation (fig. 8), consisting of removal of the metatarsal heads, should be reserved for extreme cases, in which it is most valuable (figs. 2 and 9). Murk Jansen has tenotomized the transverse head of the adductor hallucis with excellent results. Spitzy has restored the metatarsal arch by a silk suspension ligature anchored through drill holes in the first and fifth metatarsal heads.

Arthrodesis of the metatarsal joints is rarely indicated. Likewise, arthroplasty can be performed. Among the allied conditions are hyperhidrosis, ringworm, especially epidermophyton, hard and soft corns, calluses, warts, papillomas, bunion, "bunionette," hammer toes, Freiberg's infraction of the metatarsal head, contracted extensor tendons, frost-bite, trench foot, and paralgia hyperesthetica, the treatment of which will not be discussed here.

Fig. 9.—Same case as in figure 2; after operation.

Hallux rigidus, whether of the flexus or the extensus varieties, may be relieved by the insertion of a thin strip of steel the entire length of the sole of the shoe, in order to prevent movement at the metatarsophalangeal joint. True gout is not seen very often at present, but there is a very definite condition of arthritis and periarthritis occurring in the region of the big toe joint that is either caused or aggravated by disturbances of metabolism, especially the metabolism of meat, fish and eggs. Sesamoiditis is a painful condition involving the under surface of the big toe joint. The sesamoids in the flexor hallucis longus tendon are subject to much stress and strain, especially in stepping or jumping from a height or in dancing. Often the roentgenogram will reveal a division of a sesamoid resembling fracture. Many of these are developmental anomalies

which are peculiarly susceptible to trauma. A bipartite sesamoid is analogous to a bipartite patella. Usually relief from weight bearing affords comfort, but occasionally removal is necessary.

104 South Michigan Avenue.

ARTERIAL EMBOLISM

AN UNUSUAL COMPLICATION FOLLOWING THE INTRAMUSCULAR ADMINISTRATION OF BISMUTH *

JOHN A. GAMMEL, M.D.
CLEVELAND

Accidents due to intramuscular injections of mercury and bismuth salts occur occasionally, even with the most scrupulous technic. The common type is a hard, painful infiltration, which sometimes, though rarely, undergoes suppuration. During the last year, I had the opportunity to study another type of untoward reaction which seems to be rare but is important enough to justify a short discussion.

REPORT OF CASES

The first two cases were practically identical. During the first twenty-four hours after an intramuscular injection of 1 cc. of potassium bismuth tartrate, 20 per cent, the patients developed at the site of the injection an extremely painful swelling which enlarged the following days. This swelling was not deep seated and localized as in beginning abscesses, but diffuse and more superficial. There was considerable local heat. A most striking feature was a bluish discoloration of the major part of the buttock. This discoloration was not uniform but resembled more a marmoraceous network with diffuse bluish meshes of about 2 cm. width. In one instance, a similar isolated area of palm size was seen also on the lateral abdominal wall. With rest in bed and hot applications, the condition subsided within two or three weeks.

The third case was more alarming. A man, aged 48, with an old syphilitic infection, had received nine arsphenamine, seventy-nine mercuric salicylate and twenty-two bismuth injections during the past four years. On leaving the dispensary, Aug. 14, 1926, after his last injection of 1 cc. of potassium bismuth tartrate, he noticed that his foot was "getting dead," and on arriving at his home about forty-five minutes later he was unable to put on the foot brakes in his automobile. The numbness in the foot persisted, but burning or pain in his hip was not present until about eight hours afterward, when he "felt sick all over." He had to stay in bed for three days and could not eat or sleep.

Since the patient was living out of town, he did not return until one week later. At that time the entire right buttock was swollen, was very tender, and showed the same subcutaneous bluish network as described in cases 1 and 2. He also complained of pain shooting down into his ankle. The right foot was in equinovarus position; dorsal flexion of the foot or the toes and abduction were impossible—the classic picture of a paralysis of the nervus peronaeus. The patient also noted a "dead feeling" in the lateral part of the right foot and lower limb, but examination did not reveal gross sensory disturbances. Sensibility to light touch was possibly somewhat diminished on the plantar surface and on and behind the third and fourth toe on the dorsum pedis. Rest in bed and hot applications were advised.

One week later, the patient visited the dispensary again. The neurologic conditions were the same, but on the right buttock he had a most peculiar lesion of the outline, as shown in the accompanying illustration. It was brown, and in the center and on the lower part were two areas of black necrotic skin. Some of the bluish discoloration noticed the week before was still present, but the swelling and tenderness were considerably diminished. At first glance the configuration suggested a phenol (carbolic acid) burn, but on close inspection the epithelium was found intact everywhere and the patient emphatically insisted on having used nothing but hydrogen peroxide just once when the skin turned black.

He was admitted to the ward, and during the following week the brown tint of the lesion gradually darkened, the skin became necrotic, and on removal of the slough the muscle was exposed. His temperature was normal throughout his stay in the hospital.

The patient was treated with potassium permanganate compresses 1:4,000, ointment of ammoniated mercury, silver nitrate, and exposure to light and heat. The process of epithelization was very slow. Now, three months after the injection, there is still a granulating ulcer of 1 by 2 inches present; the numbness is disappearing and the paralysis of the nervus peronaeus is receding steadily. Dorsal flexion of the foot and abduction are still limited.

COMMENT

The first two cases resembled somewhat a hematoma, and I was inclined to believe that the needle on its way into the deep muscles had torn a larger blood vessel.

Necrosis of cutis and subcutis in case 3.

This explanation, of course, could not stand in case 3; a hematoma may break down but never causes an extensive necrosis of the skin such as was seen in this patient.

On looking up the literature, I found that European dermatolgoists have reported about thirty similar reactions after administration of various mercury and bismuth preparations.

The more severe reactions were noted after the injection of mercury (red mercuric iodide, mercuric chloride, mercuric succinimide and mercuric salicylate) and especially of its soluble salts. Touton,[1] Hildes,[2] Lesser,[3] Brocq,[4] Mayer,[5] Saphier,[6] Jadassohn,[7] Oppen-

* From the Department of Dermatology and Syphilology of the Western Reserve University School of Medicine and of the Lakeside Hospital.

1. Touton: Zoster femoralis nach Hg salicyl.-Injection, Arch. f. Dermat. u. Syph., 1889, p. 775, quoted by Freudenthal; Arch. f. Dermat. u. Syph. **147**: 155 (April) 1924.

2. Hildes: Jahrbuch d. bosn.-herzegow, Landesspitals, Vienna, 1898 quoted by Freudenthal.

3. Lesser: Verhandlung der Gesellschaft der Charité-Aerzte, Dec. 15, 1898, in Berl. klin. Wchnschr. **36**: 353 (April 17) 1899.

4. Brocq, M.L.: Eschare volumineuse de la fesse consécutive à une injection d'huile biiodure, Ann. de dermat. et syph., series 4, **2**: 347, 1901.

5. Mayer, F.: Inaug. Diss., Berlin, 1919, quoted by Freudenthal.

6. Saphier, Johann: Zosteriforme Hautnekrose nach intramuskulärer Einspritzung von Hydrargyrum succinimidatum, München. med. Wchnschr. **68**: 394 (April 1) 1921; **68**: 990 (Aug. 5) 1921.

7. Jadassohn: Zosteriforme Hautnekrose nach intramuskulärer Einspritzung von Hydrargyrum succinimidatum, München. med. Wchnschr. **68**: 852 (July 8) 1921.

heim [8] and Noble [9] recorded such observations. Lesser, in 1898, considered as a probable cause the perforation of an artery with hemorrhage into the tissue, which subsequently becomes necrotic as a result of infiltration with mercury. Brocq, Touton, Saphier and Oppenheim assumed an injury to a nerve.

Finally, two years ago, Freudenthal [10] succeeded in revealing the true nature of this puzzling problem in his paper on local embolic bismuth exanthem. In Jadassohn's clinic, three different times following the intragluteal administration of bismuth subsalicylate (bismugenol), he observed general malaise, and reddening and swelling of the buttock with pain radiating into the leg. Around the site of the injection there was a localized exanthem resembling somewhat a livedo racemosa with a tendency to necrosis in certain parts.

He had the opportunity of examining one case histologically, and found the cutaneous arteries blocked with the needle-shaped crystals found on microscopic examination to be a suspension of bismuth subsalicylate. From these observations he drew the conclusion that the drug was injected into a deep artery and that subsequently the cutaneous arteries were embolized by the crystals. Perivascular inflammation results, and the violent pain might be explained by ischemia. A similar pathogenesis is probable in those cases in which mercury was used.

Freudenthal's important discovery was confirmed and substantiated by animal experiments by Nicolau,[11] in 1925. In two instances, after intramuscular injection of quinine bismuth iodide, this author observed a reaction such as occurred in case 3: Diffuse painful swelling of the gluteus and a bluish red, netlike discoloration with subsequent necrosis of the central part. Histologic examination in both cases demonstrated emboli of the injected drug in the cutaneous arteries. Nicolau succeeded also in reproducing an analogous clinical and histologic picture by injecting insoluble bismuth and soluble mercury preparations into the ear artery in rabbits. The soluble salts produced a more severe reaction (endarteritic thrombosis), an observation which concurred with his clinical conditions in six previous cases.

Jeanselme, Lévy and Huet [12] presented, last February, before the Société de dermatologie et syphiligraphie in Paris, a case of ecchymotic and phlyctenular plaque following the intragluteal injection of "Curalues." In the discussion, Milian and Barthélemy diagnosed the condition as arterial embolism, and Gougerot mentioned two observations of his own after using bismuth hydroxide. Recently Barthélemy [13] reported a case of arterial embolism after an injection of bismuth carbonate.

Unfortunately I was not aware of Freudenthal's and Nicolau's papers until the wound in our third case was already granulating. Therefore a histologic examination was not made. The clinical picture, however, is so striking and absolutely identical with those in the literature that there is little doubt that I also was dealing with accidents due to arterial embolism. Freudenthal and Nicolau have revealed the true etiology of the unfortunate reaction under discussion, but the reason the bluish discoloration has a network-like appearance remains unexplained. Livedo racemosa, erythema ab igne and cutis marmorea are skin conditions of similar configuration and may be due to the same unknown factors (sympathetic and parasympathetic nervous system?).

But does arterial embolism explain also the peroneal paralysis in case 3? The injection was given into the upper inner quadrant of the buttock. It certainly is possible that it was so close to the nervus peronaeus communis that it caused the paralysis. The roentgen-ray examination showed several diffuse bismuth deposits, so that it was impossible to draw any conclusions as to the location of the last one. The skin of the buttock is chiefly supplied by the arteria glutaea inferior, and one branch of this artery is the arteria comitans nervi ischiadici. It is not impossible that through this channel some bismuth also reached the peroneal nerve and caused the foot drop.

There is still another question which arises: Some of the mercury or bismuth may in the same manner occasionally be injected into a small artery supplying just a muscle. Then the same reaction may occur in the depth of the tissue, and some deep-seated infiltrations or sterile abscesses may be due to arterial embolism.

On comparison with the reports in the literature I find that a necrosis as extensive as that seen in my case was seen formerly after mercury injections but never after bismuth. The combination with peroneal paralysis is unique.

Fortunately, accidents such as those described in this paper are rare. The three cases reported here are distributed over a series of approximately 25,000 bismuth injections. More careful technic may reduce them to a minimum. The fact, however, that on aspiration blood is not obtained is not an absolute safeguard.

8. Oppenheim, M.: Blitzfigurähnliche Hautveränderung im unmittelbaren Anschluss an aine intramuskuläre unlösliche Quecksilberinjection, Sitzungsbericht der Wiener Dermatologischen Gesellschaft vom 25. Oktober 1923, Zentralbl. f. Haut- u. Geschlechtskr. **11**: 286 (March 20) 1924.

9. Noble, in discussion on Oppenheim (footnote 8).

10. Freudenthal, Walter: Lokales embolisches Bismugenol-Exanthem, Arch. f. Dermat. u. Syph. **147**: 155 (April) 1924.

11. Nicolau, S.: Dermite livédoïde et gangréneuse de la fesse, consécutive aux injections intra-musculaires, dans la syphilis; à propos d'un cas d'embolie artérielle bismuthique, Ann. d. mal. vén. **20**: 321 (May) 1925.

12. Jeanselme, E.; Lévy, George; and Huet, Léon: Placard ecchymotique et phlycténulaire, consécutif à une injection intra-fessière de Curalues, Bull. Soc. franç. de dermat. et syph. **33**: 96, 1926.

13. Barthélemy, R.: Embolie artérielle par injection intramusculaire de carbonate de bismuth, Bull. Soc. franç. de dermat. et syph. **33**: 372, 1926.

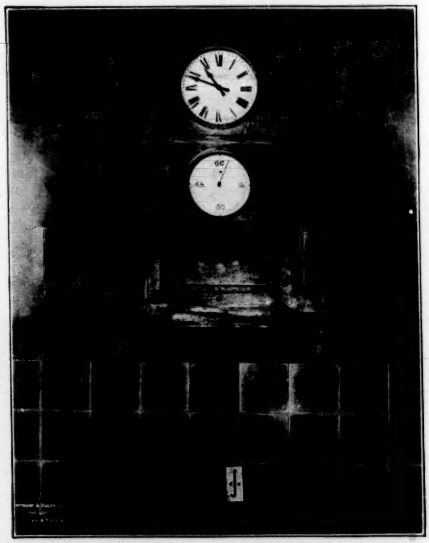
Interstitial Keratitis and Heredosyphilis.—The eye, as much as any other structure, illustrates the possibility of detecting syphilis irrespective of blood Wassermann findings. . . . The most appealing field for the diagnosis of syphilis by proper interpretation of eye findings is that of heredosyphilis. Seventy-eight per cent of the eyes of children who have the familial or prenatal form of the disease are affected at some time before the age of 30 years. Yet in only 66 per cent of these children, according to a survey which I have recently completed, was the blood Wassermann reaction positive. Fifty-two per cent of the children had interstitial keratitis, which thus takes rank among the major diagnostic leads in modern clinical syphilology. In fact, interstitial keratitis is so rarely seen as a complication of acquired syphilis that, granted its proper differentiation from tuberculous keratitis, it is prima facie evidence of heredosyphilis. Those of you who are mathematically and statistically inclined can estimate the amount of interstitial keratitis in existence from the fact that 3 per cent of all children taken in the mass have prenatal syphilis. Fifty-two per cent of these children will have interstitial keratitis. Interstitial keratitis has been estimated as constituting from 0.4 to 0.6 per cent of all eye diseases.—Stokes, J. H.: Syphilis and the Eye, American Health Congress Series **4**:11.

Clinical Notes, Suggestions and New Instruments

COUNTING THE FETAL HEART BEAT

JOSEPH B. DE LEE, M.D., CHICAGO

Nowadays a high valuation is being placed on the life of the child, and it is incumbent on obstetricians to observe narrowly its condition throughout labor. Our only means of investigating this subject is the fetal heart beat, and the latest studies have shown that minute fluctuations in rapidity, rhythm or quality of the tones are of great significance. One can often diagnose cerebral injury in a fetus that is still in utero, and predict that it will have convulsions after it is born. While a fetus runs a risk all through labor, the greatest danger occurs during the second stage, at a time when it is hardest to give it the most attention.



Clock which strikes a tiny bell every fifteen seconds. Below is switch which starts and stops the mechanism. Note bronze mottoes for guidance of obstetric operators.

To render auscultation of the fetal heart tones as easy as possible, even after one is "scrubbed up" for delivery, I suggested fastening a listening device to the accoucheur's head. This suggestion developed into the obstetric head stethoscope, which is rapidly proving its usefulness in many maternity hospitals.

As an additional device for securing scientific accuracy in counting the fetal heart beat, I invented a clock which rings a tiny bell every fifteen seconds. The illustration shows such a clock, which has been in service for nine years and has given great satisfaction. One simply listens to the baby's heart, and when the bell strikes, counts 1, 2, 3, etc., until it strikes again, which is exactly fifteen seconds measured time. If the heart beat is too rapid to count, one arranges a sheet of paper conveniently near, and with a soft pencil in hand, makes a dot on the paper for each beat between two strokes of the bell. The dots are then counted.

Falls suggested fastening a watch on the head band of the head stethoscope with a mirror in which its face could be read. V. Wachtenfeld, of Lund, Sweden, has recently published a description of a cheap, portable alarm clock with an electrical striking device.

The idea is to be able to time the heart beats accurately without having to have a watch held under the eye.

Now, Vacheron and Constantin of Geneva, Switzerland, considered by authorities the greatest watch makers in the world, have perfected a watch, slightly larger than the usual instrument, which, when adjusted, rings a bell every fifteen seconds. It can be laid on the table or even kept in the pocket.

Such a watch is useful for other purposes. It can be kept ringing while a breech or forceps extraction is being done to warn the operator either to hurry less or hurry more, and also for surgical operations to time the various procedures. It is invaluable also to the anesthetizer for counting the patient's pulse, and respiration.

426 East Fifty-First Street.

A CURIOUS CONGENITAL ANOMALY OF THE SPINE*

RICHARD B. DILLEHUNT, M.D., AND ROBBIN E. FISHER, M.D., PORTLAND, ORE.

A boy, aged 5, presented a very unusual and marked disproportion between the length of the trunk and of the extremities. Study revealed that this disproportion was due to an overgrowth of the spine, the exact nature and cause of which we are not able to determine. The case does not fit any of the known categories of growth anomalies or derangements, and because of its unusual nature it was thought to be of sufficient interest to merit publication.

REPORT OF CASE

G. S., when admitted to the Shriners' Hospital for Crippled Children in March, 1926, had a limp and an awkwardness of gait. These had been present since he was 18 months of age, at which time the left foot had been injured in a fall. This foot was favored for six months following the injury, after which it was noticed that the left lower extremity was shorter than the right.

The father stated that the boy was a smaller baby than three of the other children in the family, but that as a child was the largest for his age. It was noticed by the father, about one year before, that the obvious disproportion between the trunk and extremities existed.

The mother was described as a small woman but well proportioned. There had not been dwarfs or deformed or disproportioned children among her relatives. The father was a man of average size, well built and in good health. There were seven children in the family, among whom deformities or disproportions did not exist.

The boy was fairly well nourished, alert, and apparently of average mentality. The head was of average size and well shaped. The trunk appeared to be longer than normal for a boy of 5 years. The conformation was fairly good except for some tendency to sagging of the abdominal musculature. The increase in the length of the trunk seemed to be largely in the abdominal and lumbar portions of the spine.

The neck was abnormally broad at the root, and it felt as though there was a cervical rib on the left side. The shoulders were narrow and sloping, with a pronounced forward drooping. The chest was long, narrow and funnel shaped. The anterior chest wall bulged slightly more on the right than on the left, and there was a marked rosary.

The abdomen was very long and thin, with a visible soft protrusion on the right anterior abdominal wall, lateral to the umbilicus, which was about 3 inches in diameter. It was soft, unattached to the skin, nonfluctuating, painless, and apparently free from the subjacent musculature. Impulse was absent on coughing, and it could not be reduced. It was evidently a lipoma.

The arms and hands were well formed. When placed by the side, the finger tips reached just to the greater trochanters. Conformation of the lower extremities was normal with the

* From the Shriners' Hospital for Crippled Children.

exception of undue prominence of the greater trochanter of the right femur. It was far below Nelaton's line and stood out very prominently on walking. The right lower extremity was 1½ inches longer than the left. This increased length was due partly to increased length of the femur and partly of the tibia. There was also a moderate degree of genu valgum in this extremity. The left lower extremity was normal in appearance. Movement of the joints appeared to be normal with the exception of abduction in the hip joints, which was slightly limited.

Roentgenograms of the spine revealed the normal number of vertebrae, but there was a marked increase in the size of each individual one over the normal for a boy of 5 years. The increase in size was in all diameters. The most marked increase was in the lower dorsal and lumbar vertebrae.

At left, G. S., aged 5 years 3 months; at right, J. H., aged 5 years 9 months, apparently a well built, normal boy.

Furthermore, the outline of the bodies was irregular and rounded, rather than the normal square cut. There was an increased density of the bodies, giving the appearance of a sclerosing osteitis. The intervertebral cartilaginous disks were thicker than normal, as shown by the wider spacing of the vertebrae.

Roentgenograms of the pelvis did not reveal any very definite pathologic condition. The femoral shaft on the right side was rarefied as compared with the left, the cortex was thinner, and the trochanter had a curious rounded appearance. Other observations that would account for the difference in length of the two extremities were not noted.

The laboratory data consisting of blood count, Wassermann test, and qualitative urine examination did not show anything of interest.

COMMENT

The accompanying table shows a comparison of pertinent measurements of this patient with a boy, J. H., shown in the accompanying illustration, who is six months older, and with the mean normal measurements of boys of the same age. These figures show the patient to be 10 cm. taller than the average boy of his age, and that his sitting height is 8 cm. greater than the normal. This indicates clearly that the disproportion is due to an increased length of the spine rather than to an increase in the length of the extremities. The other measurements are all within normal limits.

That the etiology of this condition is not of endocrine origin is indicated by the complete absence of clinical con-

Case Measurements of G. S. Compared with Normal Children of Approximately the Same Age

	Height, Cm.	Sitting Height, Cm.	Length Lower Extremities, Cm. Right	Length Lower Extremities, Cm. Left	Arm Length, Cm.	Head Circumference, Cm.	Chest Circumference, Cm.	Weight, Pounds
G. S., aged 5 years 3 months.....	119.5	69.5	62	58.5	42	51	55.7	43½
Mean normals, aged 5 years....	109.4	61.9		57.8	41.2	50.3	53.5	40½
J. H., aged 5 years 9 mos., normal..	110.4	60		60.5	48.2	49	58.5	43½

ditions associated with a derangement of the glands of internal secretion. That the process is not chondrodystrophy is likewise proved by absence of the usual clinical and roentgenographic evidence of this disorder of growth.

We are unable to determine the cause or the exact nature of either this curious overgrowth of the spine or the increased length of the right leg. It is hoped that it will be possible to keep the patient under observation for a period of years.

Medical Arts Building.

AN ISCHIOPAGUS *

L. F. FISHER, M.D.; P. C. TRAVER, M.D.; and T. J. SWANTZ, M.D., SOUTH BEND, IND.

At 5 a. m., May 22, 1926, the Medich twins were born at home, attended by a midwife. Shortly after their birth, the attending physician was called on account of a maternal postpartum hemorrhage. On his arrival he observed the difficulty that the mother would have in caring for them, so advised that they be taken to the hospital for further care.

The mother and father were both of Slavish extraction and had been in the United States several years. At the time of the birth of the twins the father was 26 years of age and the mother 24 years. They were both of the dark European type. Two other single births had occurred to the mother by the father, this being the first marriage. The previous children were both boys, aged 2 and 1 year, respectively. Deaths or stillbirths had not occurred. The mother was healthy in appearance, and the father appeared normal, except for a scar on the left side of the head and neck due to a benzene burn two years before. As far as the mother could recall, there had not been twin births on her side of the family. On the other hand, the father's mother had given birth to twins, both girls, who died in infancy. Further points of interest in the family history could not be elicited.

Seven hours after birth the twins were brought to the hospital. The two measured 19 inches (48 cm.) in length. One was slightly larger in size than the other, as is shown by the circumferential measurements. The head of one measured 12¼ inches (31 cm.) in circumference, the other 12 inches (30.5 cm.); the chest of one was 10¾ inches (27.3 cm.) at the nipple line and the other 10½ inches (26.7 cm.); the cervical measurements were the same, 6 inches (15 cm.). The lower extremities of one were 6¾ inches in length (17 cm.) the other, 6½ inches (16.5 cm.). The circumference in the plane of the common umbilicus was 13¾ inches (34.4 cm.). The smaller twin, which was named Bessie, was markedly cyanotic at first, while the other was of a normal

* From the St. Joseph Hospital.

red. The smaller had a torticollis to the left, and the right frontoparietal region of the skull was flatter than usual. Except for the points mentioned, they appeared to be normal in all other external features above the ilia.

The external appearance at the plane of junction was as follows: A single umbilicus supplied both, from which a single placenta of large size had been severed by the midwife. Two sets of veins and arteries could be differentiated in the umbilical stump. Four perfectly developed lower

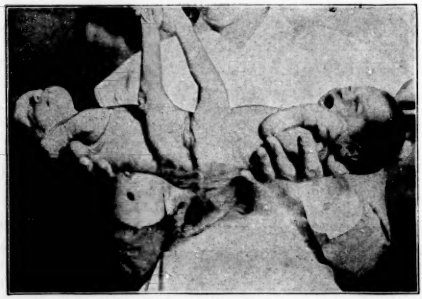


Fig. 1.—A lateral view of the functioning anus. The folds of the vulva extend upward. The child to the left is dozing, while the right is crying.

extremities were present, two projecting from one side and two from the other, the internal lateral aspect of the thigh, legs and feet being opposed in each. Above both pairs of lower extremities, the symphysis pubis appeared to be normal in situation. Between two of the lower extremities there was a normal anal opening, a vaginal canal with the usual vulval configuration and a clitoris. Meconium soon passed from the normal side. Between the other two lower extremities, an anus and vagina had not developed, but a rotund projection three fourths inch (2 cm.) in diameter was present. There seemed to be a small opening, as was proved on further investigation. Posteriorly, evidence of spina bifida or the other congenital anomalies occasionally seen in the lower spinal regions was not present. It seemed, however, that the sacra deviated slightly toward the normal genito-anal side.

An immediate roentgen-ray examination was made of the osseous systems. Fortunately, excepting the vaults of the skulls, they accepted a 14 by 17 cassette. Anterior and posterior views were made of the structures. The cervical region of each consisted of seven segments; the thoracic, of twelve segments with normal accompanying ribs. Both pulmonary fields were usual in transparency. The cardiac densities were normal in outline and configuration and were in the respective left position. The upper mediastinum in both showed the presence of the customary birth thymus. The hepatic densities were under the right diaphragmatic domes of each twin. The gastric ventricles were outlined with air and the small intestines were apparently filled with air. Air had not reached the rectum. Had air not been present, the lower osseous structures would have been delineated better than they were. Each twin had five lumbar vertebrae. The lateral view demonstrated five separate sacral segments and one coccygeal for each twin, normal at birth, without any signs of osseous fusion. As viewed from the anterior position, the sacra and coccygei deviated definitely toward the normal anus but did not touch at the tip. The ilia of each trunk had turned toward the spine, so that the external borders were on a level with a line passing through the intervertebral space of the fourth and fifth lumbar vertebrae. The pelvic rims of the ilia, pubes and ischia of each flared outward, and a symphyseal union occurred on each side.

In the morning feeding of each infant on the second day, barium was mixed with the modified whole milk. A fluoroscopic examination was made a short time later. The gastric ventricles did not force the barium through the pyloric openings, so we were unable to study the activity and position of the small intestines. Fluid barium was injected through the anus of the normal side. The anal sphincter retained the opaque material under pressure for only a short time; none of it would ascend the descending portions of either colon, which were outlined with gas in the left flank of each child. When the pressure became sufficient, the barium filled a small canal which opened in the bud, and several drops of opaque material oozed from it. A common rectum was indicated by this procedure.

Fluoroscopic examinations were made each day to observe the progress of the barium which appeared to lodge like a foreign substance in the gastric ventricles. There was some diminution in the size of the gastric barium ball each day, but the intestines were not at any time well outlined. While the barium remained in the stomachs, eructation or vomiting of the feedings did not occur, so apparently the retention did not cause deleterious effects.

Four days later, the urologist investigated the lower urinary tract. The outlines were demonstrated with a 10 per cent sodium iodide solution. At first neosilvol was used, as it was thought that the solution would be unirritating; it was, but it could not be controlled on account of its oil-like character. A urethral opening could not be found under the normal appearing clitoris, but urine could be observed appearing in the vaginal canal and it was thought that the urethral orifice was in the superior wall of the vagina. On account of the close apposition of the thighs, it was difficult to expose the vaginal surfaces.

Another anomaly on the normal side was the absence of a hymen. As a urethra could not be entered on this side, the rudimentary bud was entered with an opaque ureteral catheter and under fluoroscopic control its course observed. At first it passed into the rectum, but on withdrawal and several entries it finally at one time engaged a separate canal sensed by the urologist, and the sodium iodide was injected. From the roentgenograms we observed that the two bladders were present, joined by a narrow isthmus, and projecting from the bladder of the stronger twin, a filling occurred which was considered to be a urachus as it extended to the umbilicus. It was also noted that when a catheter was inserted into the rectum, bariumized material and urine both escaped, inducing the belief that a connection existed between the bladder and the rectum. The barium shown in figure 2 is the residue in the bladder after the rectum or recta had been evacuated, since the bladder views are very similar. An attempt was made to differentiate the bladders from the rectum by filling the two with opaque material simultaneously in the lateral position, but it proved to be unsuccessful.

Fig. 2.—Lateral view of opaque bladder injection: 1, 1, barium in stomachs; 2, 2, bladders; 3, urachus; 4, opaque ureteral catheter in urethra of rudimentary side; 5, isthmus connecting two bladders.

Feeling that the twins had had enough roentgen-ray exposure from the first series, we planned to make further examinations

at the end of three months. They were taken out on an exhibition tour early in August, 1926. Both at this time appeared to be rugged and had gained considerable weight. During a strenuous itinerary, one finally contracted pneumonia and died, Oct. 9, 1926. As is usual, the other twin died shortly after. This was doubtless due to anastomosing venous and arterial systems at the plane of union.

COMMENT

An interesting speculation arises concerning the contribution of each individual to the external genitalia and anal regions. According to embryologists, in monozygotic fused twins of this type, more or less normal genito-anal structures form on one side and rudimentary on the other, each arising from one individual. It would seem from our study that each twin contributed one half to each structure. That is, half of the anal ring, one side of the vagina, one vulval roll, and half of the clitoris arose from each. It was hoped that these twins would live to such an age as to be able to register proof for this supposition. It is unfortunate that the conjecture will be unanswered by this pair. A dissecting autopsy would have been of value. A complete autopsy report will be made separately by Dr. Kano Skeda, pathologist, Minneapolis General Hospital, Minneapolis.

317 Pythian Building.

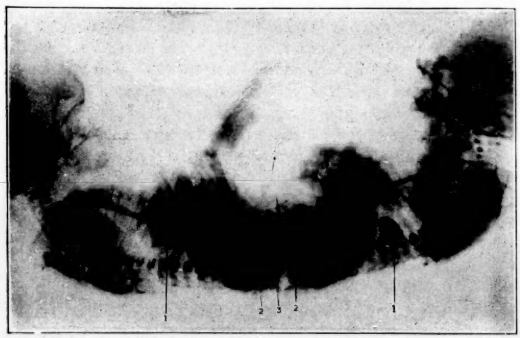


Fig. 3.—Lateral view made on the third day of life, illustrating the degree of flexion of the spines. Barium, which had been given three days before, still remained in the stomachs; the residue in the bladders was the result of a barium clysma that had been evacuated. Small masses of barium are seen distributed through the intestines of both: 1, 1, stomachs; 2, 2, bladders; 3, urachus; 4, rudimentary canal filled with barium.

The Instability of Bacterial Species.—For the past three decades there has been accumulating and ever increasing mass of evidence pointing to the instability of bacterial species. For the systematic bacteriologist the situation has already become somewhat alarming; while, for those who have never taken the problems of classification too seriously, it at least has inconvenient aspects. But the present state of affairs, as reflected in both publications and discussions, may not be entirely free from elements of danger, since the growing chaos tends to discourage sincere attempts to alleviate the difficulties by searching for the causes that underlie them. . . . Cocci become rods and rods cocci or spirals; forms of growth change overnight; motility is lost and regained; fermentation reactions are modified by time and opportunity; spore formers become sporeless; hemolytic activity comes and goes; capsulated bacteria lose their capsules, and capsules are gained by noncapsulated forms; antigenic power vanishes and reappears; cultures become spontaneously agglutinative or fail of agglutination; virulent cultures become harmless and harmless cultures virulent. It may be many years before we learn the cause of all these apparent incongruities.—Hadley, Philip: Microbic Dissociation, *J. Infect. Dis.* **40**:5 (Jan.) 1927.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

LACTOBACILLUS ACIDOPHILUS MILK (TOWT).—A milk culture of *B. acidophilus*. It contains not less than 250 millions of viable organisms (*B. acidophilus*) per cubic centimeter at the time of sale.

Actions and Uses.—See Lactic Acid-Producing Organisms and Preparations (New and Nonofficial Remedies, 1926, p. 211).

Dosage.—For adults, from 500 to 1,000 cc. daily, between meals and one hour before retiring. When the administration of lactobacillus acidophilus milk-Towt is to be supplemented by lactose, 50 Gm. is to be administered on the third day, increased to 100, 200, and 300 Gm. on the fourth, fifth, and sixth days, respectively, unless diarrhea occurs or large amounts of gas are formed, when the quantities may be reduced. Lactobacillus acidophilus milk-Towt is marketed in bottles containing 475 cc. (1 pint); it must be kept in a cool place and should be used prior to the date stamped on the package.

Manufactured by the Towt-Nolan Laboratory, Oakland, Calif. No U. S. patent or trademark.

Raw milk containing about 2.5 per cent butter fat is sterilized at 18 pounds pressure for thirty minutes and cooled to 37 C. It is then inoculated with a pure milk culture of *B. acidophilus*, one half of which is the first propagation of the organisms and one half of which is the second propagation. The batch is then incubated at 37 C. for forty-eight hours, at which time it has an acidity of about 0.9 per cent lactic acid and an acidophilus count of about one billion per cubic centimeter. The coagulated curd is thoroughly agitated until it becomes creamy, and is filled into sterile pint bottles through a sterile filling apparatus.

SCARLET FEVER IMMUNITY TEST (See New and Nonofficial Remedies, 1926, p. 367).

E. R. Squibb & Sons, New York.

Scarlet Fever Streptococcus Toxin-Squibb. (See New and Nonofficial Remedies, 1926, p. 368): Also marketed in packages of three 1 cc. vials, each containing 30,000 skin test doses.

SODIUM CACODYLATE (See New and Nonofficial Remedies, 1926, p. 80).

The following dosage forms have been accepted:

Glaseptic Ampoules Sodium Cacodylate-P. D. & Co., 0.05 Gm. (¾ grain), 1 cc.
Prepared by Parke, Davis & Co., Detroit.

Glaseptic Ampoules Sodium Cacodylate-P. D. & Co., 0.1 Gm. (1½ grains), 1 cc.
Prepared by Parke, Davis & Co., Detroit.

Glaseptic Ampoules Sodium Cacodylate-P. D. & Co. 0.13 Gm. (2 grains), 1 cc.
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Glaseptic Ampoules Sodium Cacodylate-P. D. & Co., 0.2 Gm. (3 grains), 1 cc.
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Glaseptic Ampoules Sodium Cacodylate-P. D. & Co. (for Intravenous Use), 0.2 Gm. (3 grains), 5 cc.
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Glaseptic Ampoules Sodium Cacodylate-P. D. & Co. (for Intravenous Use), 0.45 Gm. (7 grains), 5 cc.
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Prepared by Parke, Davis & Co., Detroit.

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SATURDAY, MARCH 26, 1927

RECENT OBSERVATIONS ON SCARLET FEVER

The new method of treating scarlet fever patients by the administration of a suitable antitoxin has presented a problem in relation to the development of protection against the disease. The immunity developed by the vast majority of patients convalescent from scarlet fever presumably comes as a response to the presence in the circulating blood, during the first week of the disease, of the specific toxin produced by the etiologic agent, *Streptococcus scarlatinae*. Davies[1] of the Yale University School of Medicine has pointed out that, as scarlatinal antitoxic serum, recently introduced for the treatment of scarlet fever, rapidly neutralizes this circulating toxin and thereby removes the stimulus which induces a permanent active immunity, it becomes possible that patients promptly cured by antitoxin may become susceptible again, after the relatively transient passive immunity conferred by the administration of antitoxic serum has terminated. A comparison has therefore been attempted in the New Haven Hospital between the degree of late immunity to scarlet fever developed by former patients who were treated with scarlet fever antitoxin during the toxemic stage of the disease and those who did not receive antitoxin. So far as can be ascertained by the limited number of observations thus far made, it appears that there may be some disadvantage in the therapeutic dosage with the antitoxin in respect to the establishment of a more lasting immunity. Experience will presently show whether or not the advent of scarlet fever antitoxin therapy will so alter the natural course of immunization to the disease as to increase the incidence of second attacks of scarlet fever in individuals treated with serum. If it is decreased, owing to the rapid neutralization of the toxin, it may develop that in some instances relapse following inadequate antitoxin therapy is the result of the early temporary neutralization of the toxin and the consequent removal of the natural stimulus to antitoxin formation. The successful momentary combating of the actual disease may thus actually decrease the security that an attack of scarlet fever almost invariably promoted in former days.

The possibility of an insidious inroad of scarlet fever has been emphasized, likewise at Yale, by Nicholls.[2] She has demonstrated the presence of *Streptococcus scarlatinae* in a notable proportion of persons who exhibited features of infection with hemolytic streptococci without evidences of clinical scarlet fever. One is reminded of the older descriptions of "scarlatina sine exanthemate." Some of the persons had tonsillitis, some acute pharyngitis, and others a variety of complications of the respiratory tract. Usually they had been exposed intimately to scarlet fever. As Nicholls points out, it is of great interest in relation to the problems of immunity to infection in general, and to scarlet fever in particular, that an existing immunity to the soluble toxin of *Streptococcus scarlatinae* does not necessarily prevent the development of even severe local pyogenic infections with this organism in persons in intimate contact with scarlet fever. It would appear highly probable, Nicholls adds, that the frequency of pyogenic infections by *Streptococcus scarlatinae* is greater than generally supposed, that persons so infected may serve as foci for the spread of scarlet fever, and that a negative Dick test is little or no indication that a person exposed to scarlet fever is not liable to serious pyogenic infections with *Streptococcus scarlatinae*.

The Yale studies[3] have demonstrated also that the amount of scarlet fever toxin found in the blood of scarlet fever patients during the acute stage of the disease varies between very wide limits. Clinical estimation of the degree of toxemia in individual persons is subject to considerable error. In view of this fact, and the undoubted wide variations in the amount of toxin in the blood, Trask urges that a large excess of antitoxin should be used for therapeutic purposes to obtain consistently satisfactory results. It should be administered as early as possible in the disease in order to check the toxemia during its period of increase. The duration of the specific toxemia of scarlet fever parallels the duration of the rash. Consequently, in late cases with faded rash, little or no benefit may reasonably be expected from antitoxin therapy. Severe septic complications may continue when the specific toxemia and its attendant rash have terminated. The Yale investigators suggest, therefore, that *Streptococcus scarlatinae* may have at least two quite different modes of attack, and that the defensive mechanism of the host against these may be dissociated. Variable combinations of these factors result in different clinical pictures of the disease.

1. Davies, J. A. V.: Studies in Scarlet Fever: IV. Postscarlatinal Immunity in Patients Treated with Antitoxin, J. Clin. Investigation **3**: 423 (Dec. 20) 1926.

2. Nicholls, Edith E.: Studies in Scarlet Fever: III. Infections with Streptococcus Scarlatinae in Persons with Scarlatinal Antitoxic Immunity, J. Clin. Investigation **3**: 411 (Dec. 20) 1926.

3. Trask, J. D.: Studies in Scarlet Fever: I. The Amount of Scarlatinal Toxin in the Blood of Patients with Scarlet Fever, J. Clin. Investigation **3**: 391 (Dec. 20) 1926. Blake, F. G., and Trask, J. D.: Studies in Scarlet Fever: II. The Relation of the Specific Toxemia of Scarlet Fever to the Course of the Disease, ibid. **3**: 397 (Dec. 20) 1926.

OXYGEN AND MUSCLE WORK

The current theory of muscular contraction differs from the earlier explanations of the function of the contractile tissues notably with respect to the precise rôle of oxygen. It is now believed that the chemical changes leading to muscular activity take place in the absence of oxygen, while the recovery processes are dependent on the presence of this gas. The production of lactic acid thus becomes an essential feature of muscular contraction. In harmony with this, it has been demonstrated that during and following severe muscular exercise lactic acid appears in abnormal quantities in the blood. The urine, however, does not always similarly show the presence of this muscle catabolite.

In explanation of this phenomenon, Hewlett, Barnett and Lewis [1] of the Stanford University School of Medicine in San Francisco appear to have demonstrated that there is a renal threshold value for lactic acid somewhat as there is for circulating glucose. According to their data on exercising men, an excess of lactic acid in the urine cannot be demonstrated after exercise unless the level in the blood has been considerably increased over the normal level. In their tests the urinary output began to increase when the blood figures lay between 30 and 40 mg. of lactic acid per hundred cubic centimeters of blood.

It has repeatedly been noted in recent years that the inhalation of air enriched with oxygen during exercise may lessen the subjective sense of dyspnea during and immediately after exercise. These observations of the Stanford group leave no doubt that one effect of such enriched intake of oxygen is a demonstrable decrease in the appearance of lactic acid. The possible effects of the traditional "fatigue product" in muscle are thus diminished. A stumbling block in the interpretation of the possible action of such abundance of oxygen has lain in the circumstance that anoxemia does not regularly accompany moderate exercise. Himwich and Barr [2] have actually demonstrated that during moderate exertion, at sea level, there is regularly an increased arterial oxygen content, and apparently even a greater saturation of hemoglobin in the arterial blood than usual.

How, then, are we to account for the apparent advantages of the increased oxygen supply? Hewlett and his collaborators concluded that the absence of an arterial anoxemia during moderately strenuous exercise does not preclude an oxygen shortage in the active tissues which may be lessened by oxygen inhalations. During exercise the utilization of oxygen by the heart and by the active voluntary muscles is extraordinarily rapid, and the supply of oxygen can be maintained only by a much more rapid rate of blood flow through the active tissues. If the necessary blood flow is not maintained, an oxygen shortage might readily appear in these tissues even though the arterial blood is well saturated with oxygen. The inhalation of oxygen during exercise may increase the oxygen supply to the active muscles in two ways: first, by raising the oxygen saturation of arterial blood, and, second, by enabling the heart through this better oxygen supply to maintain a more rapid circulation. Thus, as a result of oxygen inhalations the active muscles may receive both a better quality and a greater quantity of blood. The lessened accumulation of lactic acid in the body would lessen the pulmonary ventilation, for the accumulation produces an acidosis which stimulates the respiratory center to increased activity. Accordingly, oxygen inhalations may also lessen the pulmonary ventilation during exercises which are not sufficiently strenuous to increase the output of lactic acid in the urine.

1. Hewlett, A. W.; Barnett, G. D., and Lewis, J. K.: The Effect of Breathing Oxygen-Enriched Air During Exercise upon Pulmonary Ventilation and upon the Lactic Acid Content of Blood and Urine, J. Clin. Investigation **3**: 317 (Dec. 20) 1926.
2. Himwich, H. E., and Barr, D. P.: Studies in the Physiology of Muscular Exercise: V. Oxygen Relationships in the Arterial Blood, J. Biol. Chem. **57**: 363 (Sept.) 1923.

BLOOD REGENERATION THROUGH DIET IN ANEMIA

For many years, interest in the therapeutic aspects of blood regeneration after the loss of blood pigment was centered largely in the supply of iron to the body. This element is, of course, conspicuously located in the red blood corpuscles in comparison with other cells of the organism; but from a quantitative standpoint it has long seemed as if overemphasis were being placed on one component of the erythrocytes to the exclusion of other possible precursors of that unique biochemical compound, hemoglobin. The nonferruginous part of this substance is decidedly unlike the constituents of blood-free tissues, and little is known definitely at present about its genesis. Accordingly, there is a growing impression that the study of blood regeneration must take into account not merely the long stressed depletion of the body with respect to iron, but also the possible need of specific organic materials out of which the remainder of the hemoglobin molecule is built up. Furthermore, in view of the fact that under some circumstances the needed supply of erythrocytes seems to lag even under the influence of supposedly satisfactory dietary intake, attention has necessarily been further directed to the behavior of the hematopoietic organs, as well as to the materials out of which blood cells can be constructed. Indeed, it is not unlikely that under some circumstances an impaired function of the bone marrow, for example, rather than any lack of hemoglobin-forming products, is responsible for the production or persistence of an anemia.

There have been striking indications of late that dietary factors may play a significant part in the ability of the body to recover from certain forms of anemia. The feeding of liver in the management of pernicious anemia has received a vigorous impetus, particularly as a result of the observations of Minot and others in

Boston.[1] At the University of Rochester, Whipple[2] and his associates have effectively studied the potential hemoglobin-forming capacity of certain diet factors in artificially produced severe secondary anemias. The animals used were kept on a ration seemingly adequate for health over long periods, yet unadapted to secure restitution of the hemoglobin removed by hemorrhage. Livers of the pig, beef and chicken are potent regenerative factors. By contrast, fish liver is almost inert and whole fish gives only slight regeneration when added to the diet. The kidney of the pig and beef have now been added to the list of cooked animal products that are decidedly potent. According to the Rochester investigators, this indicates the storage in kidney cells of various substances readily convertible into hemoglobin. The favorable diet response and hemoglobin production following liver feeding can be explained on the ground that the liver is concerned with pigment metabolism, and the liver would be the logical storehouse for reserve substances that are readily convertible into hemoglobin. In chronic nephritis, as a rule, there is a definite secondary anemia. This has been attributed in a vague sort of way to intoxication due to the very products that have injured the kidney parenchyma. This is not a convincing explanation, and the possibility is suggested that in some unknown fashion the kidney takes part in the conservation of some pigment substances, or is one of the warehouses where pigment substances or potential pigment materials are stored against emergency demands. In advanced kidney disease, these normal functions may be disturbed with a resultant anemia. Robbins and Whipple also recall that in pernicious anemia there is a deposit of considerable iron-containing pigment in the kidney tubules as well as in the liver cells. They suspect that the kidney in this disease also is as important in the conservation of iron for the body economy as the spleen, which usually receives the credit for such iron conservation.

In the recent investigations the more common cuts of meat—the skeletal muscle of beef and pig—appear in an unexpectedly favorable light as diet factors conducive to hemoglobin production. Even the chicken gizzard has come into its own in this respect. "Giblet" lovers may rejoice in their physiologic wisdom. The vegetarian propagandist will do well to take these experimental facts to heart when he approaches the field of dietotherapy. The dairy products likewise have their outspoken limitations in severe and sustained anemias. According to Whipple and Robbins, whole milk, even when used in large amounts, will not modify in any recognizable way the output of red cells and hemoglobin per unit period. It must be admitted, they add, that milk as a food in anemia is much inferior to many meat products in the measured capacity to produce hemoglobin under controlled experimental conditions. Physicians are warned to keep this in mind in the dietary control of simple anemias, particularly in children, in whom one may observe anemic conditions treated with a diet rich in milk, which is the poorest possible food for rapid blood regeneration. It is easily possible to introduce some of the favorable diet factors into these milk diets, which will then supply the body mechanism with suitable raw material for the manufacture of red cells and blood hemoglobin. One of the casual comments of Whipple and Robbins deserves verbatim repetition. "Any person," they remark, "who works with standard 'anemia dogs' and observes the ease with which hemoglobin regeneration can be controlled by diet factors comes to believe that many types of human anemia may be treated to advantage by diet control rather than by other methods."

1. Iron and Blood Regeneration, editorial, J. A. M. A. **86**: 1075 (April 3) 1926; The Treatment of Pernicious Anemia, ibid. **87**: 672 (Aug. 28) 1926.

2. Robscheit-Robbins, F. S., and Whipple, G. H.: Am. J. Physiol. **72**: 408, 431 (May) 1925. Whipple, G. H., and Robscheit-Robbins, F. S.: Ibid. **72**: 395, 419 (May) 1925; Blood Regeneration in Severe Anemia: V. Influence of Striated and Smooth Muscle Feeding, ibid. **79**: 260 (Jan.) 1927. Robscheit-Robbins, F. S., and Whipple, G. H.: Blood Regeneration in Severe Anemia: VI. Influence of Kidney, Chicken and Fish Livers, and Whole Fish, ibid. **79**: 271 (Jan.) 1927. Whipple, G. H., and Robscheit-Robbins, F. S.: Blood Regeneration in Severe Anemia: VII. Influence of Dairy Products on Hemoglobin Production, ibid. **79**: 280 (Jan.) 1927.

Current Comment

FILTRATION THROUGH LIVING MEMBRANE

Nearly two centuries and a quarter ago, when Joseph Addison[1] wrote of "the infinitude of pipes and strainers" of which the body is composed, he had little idea of the whole truth. To a considerable extent, body welfare does depend on "strainers." Much has been learned of the phenomena of filtration by the use of collodium membranes. Recently Amberg[2] has experimented, for the first time, with filtration through living membrane. He delivered, by abdominal incision, the mesenteries of anesthetized bullfrogs and rabbits, and stretched them over paraffined rings beneath which funnels were placed. The mesenteries always withstood pressures less than 180 mm. of mercury, and many times remained intact under pressures of 720 mm. The rate of filtration was affected by change in temperature and by the reaction and concentration of the filtering solutions. That water and sodium chloride will filter through living membrane was definitely established. Neutral sodium chloride solution was found to be alkaline after filtration. The membrane was permeable to solutions of congo red, methylene blue, gentian violet, protein and hemoglobin. Fat globules of milk did not pass through the mesentery. In other experiments, certain substances were found to pass from the circulation into the filtrate and from the filtering solution into the circulation. When large amounts of urea were injected into the blood stream, sixteen times as much urea appeared in the filtrate as had appeared before the injection was made. Glucose injected intravenously

1. Addison, Joseph: Labor and Exercise, in the Sir Roger de Coverly Papers.

2. Amberg, S.: Filtration Through Living Membrane, Proc. Staff Meeting, Mayo Clinic **2**: 21 (Feb. 2) 1927, discussed by L. G. Rowntree,

slowed the rate of filtration. Although these facts are disconnected, studies of permeability, when they become applied to problems of nutrition, edema and nephritis, will be of great importance. "At present," however, says Rowntree, "we are attempting nothing but to gather facts, and we wish particularly to avoid applications, explanations and generalizations."

CORRELATION OF VIRUS WITH ORGANISM IN ENCEPHALITIS

In 1917, von Wiesner,[1] while studying epidemic encephalitis, isolated a pathogenic organism. Others, including Rosenow[1] (1924), have reported similar results, and in 1926 Freeman and Evans[2] obtained a pleomorphic organism from a case of epidemic encephalitis. In addition, a great deal of work has been done with a filtrable virus which has been obtained from cases of encephalitis and which can be passed from animal to animal without cultivation of an organism. An attempt to correlate the results obtained with viruses and with organisms has now been made by Evans.[3] Since abundant investigation[3] has shown the similarity of the viruses of herpes and of encephalitis, Evans obtained from various laboratories six different viruses, four of which were from cases of herpes, one from a case of encephalitis, and one, well known,[4] from the cerebrospinal fluid of a syphilitic patient. Methods of obtaining cultures by planting on meat medium differed in details. In some cases cultures were obtained directly from the virus as it was received from the contributing laboratory. In other instances, it was necessary to pass the virus through an animal. With all six viruses, however, cultures of virulent streptococci and of spore producing rods were obtained which were morphologically similar to the pleomorphic organism previously described. The specificity of this organism is yet to be established, but it seems likely that these recent studies will have an important bearing on the problem of the etiology of encephalitis.

1. Cited by Freeman, Walter: Chronic Epidemic Encephalitis, J. A. M. A. **87**: 1602 (Nov. 13) 1926.
2. Evans, A. C., and Freeman, Walter: Studies on the Etiology of Epidemic Encephalitis: I. The Streptococcus, Pub. Health Rep. **41**: 1095 (June 4) 1926, cited and summarized by Freeman.
3. Evans, A. C.: Studies on the Etiology of Epidemic Encephalitis: II. Virulent Bacteria Cultivated from So-Called Herpetic and Encephalitis Viruses, Pub. Health Rep. **42**: 171 (Jan. 21) 1927.
4. Flexner, Simon; and Amoss, H. L.: Pathology of Experimental Virus Encephalitis: Exotic Strain of Encephalitogenic Virus, J. Exper. Med. **41**: 215 (Feb.) 1925, cited by Evans.

The College Laboratory and Research.—The worst combination, from the point of view of research, is the college laboratory where routine diagnostic work is undertaken, either to add to the funds of the college or to augment the entirely inadequate salaries of the staff. This state of affairs is found chiefly in laboratories devoted to pathology and bacteriology, which have a closer connection with clinical medicine than have any of the other branches of academic medical study. In many such places research is well-nigh an impossibility, and the condition is so serious as almost to constitute a scandal. University professors or lecturers in other subjects are not expected to, or are not forced to, augment their salaries in this way, but it is almost the rule in pathology and bacteriology, and presents a serious and real bar to progress in these subjects. The combination of either teaching or routine work is not incompatible with research so long as a fair share of the day is genuinely free for research.—Bigger, J. W.: *Irish J. M. Sc.* **6**:25 (Jan.) 1927.

Association News

THE WASHINGTON SESSION

Preparations for Annual Golf Tournament

The thirteenth tournament of the American Medical Golfing Association is set for Monday, May 16, at the Columbia Country Club, all-day play being planned, to be followed by the golf dinner in the evening. Dr. H. H. Kerr is chairman of the local golf committee and ex-officio secretary of the Golfing Association.

Any male member of the American Medical Association is privileged to join this association. Applications for enrolment and entries to play should be sent to the Business Secretary, Dr. John Lorenzo Walter, 1507 Hinman Avenue, Evanston, Ill., before formal entries close, May 1, and to Dr. W. J. Cusack, 1849 Kalorama Road, N.W., Washington, D. C., after May 1.

Full details of the Association golf program will be mailed, April 1, to all Fellows who are then on the mailing list of the Golfing Association.

The local committee at Washington will shortly publish announcements which will interest all golfing Fellows of the Association.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Held in Chicago, Feb. 14, 15 and 16, 1927

(Continued from page 931)

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

FEBRUARY 15—AFTERNOON

Teaching Value of Postgraduate Clinics and Programs
DR. WALTER L. BIERRING, Des Moines

Taking Medical Education to the Practitioner
DR. CHARLES A. GORDON, Brooklyn

Graduate Medical Education in Europe in 1926
DR. LOUIS B. WILSON, Rochester, Minn.

These three articles will be published in full in a future issue of THE JOURNAL.

DISCUSSION ON PAPERS OF DRS. BIERRING, GORDON AND WILSON

DR. STEPHEN RUSHMORE, Boston: At Tufts we do not give graduate instruction, but it seems to me that this demand for graduate instruction is simply a part of the very general movement in this country to provide adult education. It is a movement which we find in the academic institutions as well as in professional schools, perhaps more in the academic institutions. The movement is spreading. It is gathering greater force from year to year. I do not know just what the interpretation is regarding undergraduate instruction, but I am sure that the challenge to the undergraduate medical school is to provide students, that is to say, to carry on its work in undergraduate and medical instruction, so that the graduate will be a student for the remainder of his life. Just how this is to be done, I will not attempt to specify at this time, but it seems to me there is great opportunity, in this challenge, of tremendous importance to the undergraduate medical school.

DR. WALTER L. BIERRING, Des Moines, Iowa: That there is a certain challenge to the undergraduate school is equally true for graduate extension work. Every medical school should recognize the opportunity in taking part in these clinical conferences whenever they can. Dr. Wilson brought out one distinct deficiency in American medical education, and that is the great lack of knowledge of a foreign language, or particularly of the scientific language. There is a good deal to be said about this personal contact with a medical leader and the influence of it as contrasted with the reading of an article by a certain authority. The great difficulty of the day is trying to meet this demand for clinical conferences.

We are trying to take in too much territory, and these large assemblies are losing much of their real purpose by expanding too much and thinking only of numbers. But in a general way this contact with the teacher, this introduction of clinical instruction to the practitioner, I am sure is one of the distinct functions of the day.

DR. CHARLES A. GORDON, Brooklyn: I believe that medical schools could and should continually tell all their students in college that their education is not finished, and prepare the way for the students they graduate, so that they will in the future take the postgraduate courses whenever the opportunity is offered. The county medical societies do not do their full duty if they fail to provide some form of graduate education for their members, nor do medical schools do their full duty if they fail or refuse to cooperate when asked by the physicians in their own community.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Bill Introduced.—Senate bill 106 would safeguard the distribution and sale of certain dangerous caustic or corrosive acids.

ARIZONA

Personal.—Dr. Joseph M. Greer has been elected president of the Maricopa County Medical Society for 1927.——Dr. Henry K. Wilson, Holbrook, has been appointed health officer of Navajo County.

Senate Committee Unfavorable to Basic Science Bill.—The public health committee of the state senate reported unfavorably on the basic science bill which had been reintroduced after being indefinitely postponed. The bill was introduced under the auspices of the medical profession of the state.

CALIFORNIA

Society News.—The Placer County Medical Society presented a humidor and cigars to Dr. Robert F. Rooney, "dean" of physicians in that section of the state, where he has practiced for forty-nine years. Dr. Rooney is a past president of the Placer County Medical Society.——The San Joaquin County Medical Society voted, February 3, to consider it unethical for its members to become associated with the "Physicians and Surgeons Insurance Corporation," as outlined in the plan by George W. Goodale.——Dr. Ludwig A. Emge of Stanford University School of Medicine, San Francisco, addressed the Stanislaus County Medical Society, February 11, on "Fertility and Sterility."——The Contra Costa County Medical Society has voted to approve a goiter survey of the high school children of the county.——Colleagues of Dr. Theophilus C. Donnell, Long Beach, gave a dinner recently to celebrate his fiftieth year in the practice of medicine.

State Medical Meeting.—The fifty-sixth annual meeting of the California Medical Association will be at the Biltmore Hotel, Los Angeles, April 25-28, under the presidency of Dr. William T. McArthur. The general sessions, Tuesday and Wednesday, will be addressed by Drs. Howard A. Kelly, Baltimore; Stuart McGuire, Richmond, Va., and James B. Herrick, Chicago; Surg. Gen. Hugh S. Cumming, U. S. Public Health Service, and Dr. Hubert Work, Secretary of the Interior, will be present, provided their boat from Honolulu is not delayed. The guest of the surgical section will be Dr. Donald C. Balfour, Mayo Clinic, Rochester, Minn., whose subject will be "The Treatment of Gastric Ulcer"; Dr. George W. Middleton, Salt Lake City, will discuss "The Goiter Problem," and Dr. Robert S. Dinsmore, Jr., Cleveland, "Preoperative and Postoperative Care of Goiter Patients." Dr. Henry J. Gerstenberger, Cleveland, will be the guest of the section on pediatrics; Drs. Charles G. Sutherland, Rochester, and C. F. McGuffin, Calgary, Canada, of the section on radiology, and Dr. Arthur L. Bloomfield of Stanford University, of the section on medicine. Dr. Howard A. Kelly will speak in Los Angeles churches Sunday morning and evening preceding the meeting. Dr. William A. Evans, Chicago, will address a public meeting at the Philharmonic Auditorium, Tuesday evening. A new feature will be scientific moving pictures; no picture will be shown twice. The annual banquet and ball will be Thursday evening at the Biltmore; all the living past presidents of the association will be there. Arrangements have been made for entertainment for the visiting ladies and for the annual golf tournament. There will be clinics in at least five Los Angeles hospitals from 7:30 to 10 in the morning.

COLORADO

Personal.—Dr. Gerald B. Webb, Colorado Springs, was a delegate from the United States Government to the Laennec Centenary recently held in Paris, France.

Midwinter Clinic at University Hospital.—The University of Colorado School of Medicine and Hospitals held a midwinter clinic at the Colorado General Hospital, 4200 East Ninth Avenue, Denver, February 22-25, to which all physicians of Colorado were cordially invited. The aim of these clinics is to develop at the university a center of medical education and teaching for physicians of the entire state. Charges were not made and the demonstrations and conferences were arranged to be advantageous to the largest possible number of physicians. An invitation was extended to the physicians of the state to visit at the institution at any time to attend daily clinics, or to be guests of the medical schools and hospitals.

CONNECTICUT

Isidor Yochelman Sentenced to Penitentiary. — Isidor Yochelman, Bridgeport, an unlicensed eclectic "physician," was sentenced, March 17, by Judge Wolf to serve from six to ten years in the state's prison following a verdict of guilty of manslaughter. It is reported that Yochelman was charged with performing an illegal operation in 1926, on a 20 year old girl, who died. The jury deliberated fifty-nine minutes in reaching a verdict. Yochelman's license was revoked in 1923 following the diploma mill investigation. In 1915, it is reported, he applied for a license in Massachusetts, submitting a statement that he was a graduate of the Imperial University of Kiev in Russia, in 1912. He is reported to have engaged another man to take his place at this examination, but the proxy was soon detected, and Yochelman's papers were not considered by the board (THE JOURNAL, January 8, p. 105).

DELAWARE

Bill Introduced.—House bill 413 would define osteopathy, and would regulate the practice of osteopathic physicians and surgeons.

DISTRICT OF COLUMBIA

Personal.—Dr. John Foote, professor of diseases of children, Georgetown University School of Medicine, was appointed by the Secretary of State as a delegate to the Fifth Pan-American Child Health Congress, which convened in Havana, Cuba, February 13.——Dr. Sophie A. Nordhoff-Jung recently received a medal from the German government for distinguished services in Red Cross work rendered in Germany before the United States entered the World War.

FLORIDA

Diploma Mill Trial Ends—Munch Sentenced.—Dr. George A. Munch and seven other defendants were placed on trial in the federal district court, Tampa, March 16, on a charge of using the mails to defraud, in connection with the sale of medical diplomas and licenses. Munch was sentenced to the federal prison at Atlanta for a term of five years and to pay a fine of $1,000. Munch, who was formerly secretary of the Florida Eclectic Medical Examining Board, refused to turn over his records in 1921 when the new composite board was established. This gave him the opportunity to issue licenses, which were made to appear legal by being dated prior to 1921. The cases against the other defendants at the trial, William H. H. Sharpe, Joseph M. DeGaetani, Lloyd Bruce Riley, Francis T. Shyne, Henry B. Sbordi, John J. Heitz and Charles C. Faiman, were nolle prossed. Several others indicted in connection with the diploma mill investigation, most of whom appeared as witnesses for the government and who were not tried at this time, were Charles Wade Page, Samuel

McCubbin, Francis Trapani, Paul C. Ronning, Edward J. Roach, Benedict Lust and William A. Lucia. In reporting the testimony at the trial, the Tampa *Morning Tribune* says that Samuel McCubbin, secretary of the Eclectic Medical University of Kansas City, testified that he sold several degrees to Munch for persons who never attended his school, including a diploma bearing the name of Edward J. Roach, and another the name of William H. Stippack. Stippack, who lived at Tampa, testified that he was formerly a physical director, and as such gave treatments to several persons, and that the local medical society told him to stop practice. He then paid Munch $800 for a diploma of the Baltimore Eclectic Medical College, an institution that, according to his testimony, he never attended and did not know where it was, and that when he moved to Connecticut and applied for a license he was turned down. On the witness stand Roach identified two licenses to practice in Florida which he said Munch gave him, also a diploma which he had received from Reuben Adcox of St. Louis, a member of the Missouri diploma mill gang. Roach testified that he passed the examination before the eclectic board in Florida for which he agreed to pay Munch $300. Eugene S. Hoffman of Bradenton identified a license and diploma which he said Munch gave him for a consideration of $1,000. Charles Wade Page of Chipley testified that he paid Munch $1,000 for a diploma, and that he gave Charles C. Faiman a license for $250. Page testified that his brother, who attended a night school in Chicago, wanted a medical diploma, and that in a week he got a diploma from Munch for $1,500. Edwin H. Pratt of Chicago and Orlando testified that he got a Florida license for $1,900, which he paid for in fees obtained as an employee of Dr. John H. Heitz at his sanatorium in Orlando. Pratt said it was agreed that he work in the sanatorium and that the fees be applied toward a license. The owner of a printing shop in St. Louis by the name of E. L. Stout testified to having been given an order by Charles C. Faiman for fifty license blanks. John M. Treble, Bath, N. Y., testified that Munch told him he could get him a Baltimore Eclectic Medical College diploma and a Florida state license for $1,200, but that he did not purchase a diploma. Paul C. Ronning, West Palm Beach, the Tampa *Daily Times* reports, testified that he received from Munch a diploma of the Baltimore Eclectic Medical College, and that he had never heard of the school until he received the diploma for which he paid $1,500. Dr. James H. Rowland, dean of the University of Maryland, Baltimore, and several other witnesses from that city testified that they had never heard of the Baltimore Eclectic Medical College. Altogether the government summoned for the trial about forty witnesses from Chicago, St. Louis, Baltimore, Kansas City, New York and other places, but only about twenty-four were placed on the stand.

GEORGIA

Personal.—Dr. John B. Warnell, formerly president of Grady County Medical Society, was recently elected mayor of Cairo.——Dr. T. B. Harper has been appointed health officer of Colquitt County, effective April 1.

Society News.—Dr. William C. Warren, Jr., read a paper before the Fulton County Medical Society, Atlanta, March 17, on "Tuberculosis of the Larynx: Its Significance to the Physician"; Dr. Samuel Kahn addressed the society, March 3, on "Medical Criminology," and Dr. Dunbar Roy on "Observations and Deductions on the Tonsillar Question."

ILLINOIS

Liquor Licenses Revoked.—The district prohibition administrator, with headquarters in Chicago, recently revoked the liquor licenses of the following for the reasons indicated:

Dr. Lee C. Carder, Hull, inaccurate records; illegal issuance of prescriptions.
Dr. Otto H. Deichmann, Springfield, inaccurate records; illegal issuance of prescriptions.

Bills Introduced.—Senate bill 143 authorizes the department of public welfare to create a new state hospital to be located in Cook County outside of Chicago. Senate bill 127 defines and regulates the practice of massage. House bills 295 and 296 would define and regulate the practice of sanatology.

Society News.—Dr. William Carpenter MacCarthy, Mayo Clinic, Rochester, Minn., and Dr. Arthur D. Black, dean and professor of dental pathology and operative dentistry, Northwestern University Dental School, Chicago, were the speakers in the cancer campaign conducted under the auspices of the Morgan County Medical Society, the chamber of commerce, and the American Society for the Control of Cancer, with the assistance of the local hospitals, at Jacksonville, March 10.—Dr. William H. Olmstead, St. Louis, addressed the Williamson County Medical Society, Herrin, March 10, on "X-Ray Diagnosis of Gallbladder Diseases."——Dr. Ralph B. Bettman, Chicago, addressed the Elgin Physicians' Club, March 16, on "Chest Surgery."

Chicago

Luncheon to Dr. Phillips.—The Home and Public Welfare Department of the Chicago Woman's Club gave a luncheon, March 25, in honor of Dr. Wendell C. Phillips, New York, President of the American Medical Association. Dr. Phillips spoke in the interest of the work for crippled children, Chicago League for the Hard of Hearing, Prevention and Relief of Heart Disease, Industrial Education of the Adult Blind, and Prevention of Blindness.

Liquor Licenses Revoked.—Following a hearing, the district prohibition administrator revoked the liquor licenses of the following for the reasons indicated:

Dr. Fred T. Barrett, inaccurate records; diversion; illegal issuance of prescriptions.
Dr. Don S. Harvey, inaccurate records; diversion; illegal issuance of prescriptions.
Dr. Harry O. J. Nyvall, inaccurate records; unlawful issuance of prescriptions; diversion; conspiracy.
Dr. Reinhard Rembe, inaccurate records; illegal issuance of prescriptions; diversion.

Society News.—Members of the Chicago Medical Society held a dinner, March 23, at the Hamilton Club in honor of Dr. Dean Lewis, Baltimore, who addressed the society that evening; there will be a joint meeting with the south side branch, March 30, the program being a symposium on the colon, and the speakers, Drs. Charles E. M. Fischer, Alexander A. Goldsmith, Lewis J. Pollock and Charles J. Drueck.——Dr. Robert B. Osgood, Boston, will read a paper before the Chicago Orthopedic Club, April 8, 8 p. m., John B. Murphy Memorial Building, on "Arthritis," which will be discussed by Drs. Billings, Phemister, Porter, Miller and Ryerson. Physicians are invited to attend.——The Seminar Club of Northwestern University Medical School and the north side branch of the Chicago Medical Society will meet, April 7, at the Montgomery Ward Building of the university, 303 East Chicago Avenue, 8:30 p. m., following a dinner at the Pearson Hotel at 6 o'clock. Following a tour of inspection of the new building, there will be a scientific program; all members of the profession and their friends are invited, and especially the alumni of Northwestern University.——Col. Chalmers G. Hall, aviation officer and survivor of the *Shenandoah* disaster, addressed the luncheon meeting of the Chicago Medical Post number 216, American Legion, Hotel Sherman, March 21.

Joint Meeting of Ophthalmologists and Otolaryngologists.—Local and out-of-town ophthalmologists and otolaryngologists are invited to a joint meeting of the Chicago Ophthalmological Society and the Chicago Oto-Laryngological Society, April 4-5, at the Hotel Sherman. Clinics have been arranged at the Cook County, Chicago Policlinic, Michael Reese, North Chicago, Mercy, St. Joseph's, Grant, St. Luke's and Post Graduate hospitals, and at Rush Medical College, Northwestern University Medical School, Illinois Eye and Ear Infirmary, Chicago Eye, Ear, Nose and Throat Hospital, University of Illinois School of Medicine, Illinois Post Graduate Medical School and Michael Reese Dispensary. For information concerning the eye clinics call State 7010, and for the ear, nose and throat clinics call Randolph 0244. There will be a dinner meeting at the Hotel Sherman, Monday, 6:30 p. m., April 4, where Dr. Burt R. Shurly, president, American Laryngological, Rhinological and Otological Society, will discuss "Some Practical Problems of Otolaryngology," and Dr. Ben Witt Key, New York, "The Practical Application of Foreign Protein in Ocular Therapy." Reservations for the dinner should be made with Dr. Charles G. Darling, 30 North Michigan Avenue, secretary, Chicago Ophthalmological Society, and with Dr. Austin A. Hayden, 25 East Washington Street, secretary, Chicago Otolaryngological Society.

INDIANA

Bill Introduced.—House bill 128 provides for licensing by the state board of pharmacy of itinerant venders of cosmetics and toilet articles.

Governor Signs Bill Requiring License of Chiropractors.—Governor Jackson has signed the so-called Huffman bill, recently passed by the state legislature, which provides for the examination and licensing of drugless practitioners, and

gives the state board of medical examiners authority to seek injunctions against unlicensed practitioners of all kinds. The bill provides for one chiropractor on the examining board.

Promotions and Appointments to Medical Faculty.—The following promotions and appointments to the faculty of Indiana University School of Medicine, Indianapolis, have been announced:

Drs. Ralph S. Chappell, John Dempsey Garrett, John Kent Leasure, Lillian B. Mueller, and John Walter Carmack, assistants, have been made associates in the department of rhinology and laryngology.
Drs. Homer W. Cox, Sidney S. Aronson, Martin T. Patton and Alan Leo Sparks have been appointed assistants to the department of rhinology and laryngology.
Dr. Elmer Funkhouser, instructor in pathology, has been promoted to associate.
Drs. H. G. Hamer and William P. Garshwiler, associate professors in the genito-urinary surgery department, have been made clinical professors.
Dr. Delbert O. Kearby has been made an associate in the department of rhinology and laryngology, and chief of the dispensary.
Dr. John F. Kelly, assistant in obstetrics, has been promoted to associate.
Dr. Daniel W. Layman, associate professor, has been made clinical professor of otology, rhinology and laryngology.
Drs. Alvin E. Newman and John R. Brayton have been appointed assistants to the department of dermatology and syphilology.
Dr. Charles A. Weller has been made assistant in surgery.
Drs. Leon G. Zerfas and Evanson B. Earp have been appointed assistants to the department of medicine.

The construction of a new wing to the medical school building at Indianapolis will be undertaken in May with funds provided by the recent legislature.

IOWA

Bills Introduced.—Senate bill 319 would require physicians to make reports of injuries arising from the discharge of firearms. Senate bill 262 would require medical examination of applicants for life insurance policies. House bill 283 regulates the medical and surgical treatment accorded indigent persons. House bill 297 would regulate the practice of osteopathy and surgery.

Society News.—At the sixteenth annual medical clinic of the State University of Iowa College of Medicine, April 19-20, the speakers will be Dr. Reuben Peterson, professor of obstetrics and gynecology, University of Michigan Medical School, and Dr. Tadasu Saiki, director, Imperial Institute of Nutrition, Tokio, Japan.——Dr. Frederick L. Nelson, Ottumwa, was elected president of the Iowa State Radiological and Physiotherapy Society for 1927.——Dr. Leroy M. Downing addressed the Linn County Medical Society, February 2, on "Putting a County Medical Society Program Across"; Dr. Dean M. Lierle read a paper on "Treatment of Common Colds."

KANSAS

Bills Introduced.—Senate bill 252 would create a state board of chiropractic examiners and regulate the practice of chiropractic. House bill 440 would provide for the erection and equipment of an asylum for the mentally infirm and dangerous insane.

Society News.—Dr. Harry L. Alexander addressed the Shawnee County Medical Society, February 7, on "Angina Pectoris," and following the dinner gave a second address on "Present Conception of Allergy." At the March 7 meeting of the society, the report of the special committee on contract or lodge practice was submitted, and the society voted not to accept the report.

Addresses by Faculty Members.—Members of the faculty of the University of Kansas School of Medicine recently gave the following addresses:

Dr. Ferdinand C. Helwig, "Histologic Examination of Cancer as an Aid to Prognosis and Treatment," Wyandotte County Medical Society, February 15.
Dr. E. C. Padgett, "Full Thickness Skin Grafts," Wyandotte County Medical Society, February 15.
Dr. Albert S. Welch, "Pernicious Anemia," Nodaway County Medical Society, February 11.
Dr. Thomas G. Orr, "Gallbladder Disease," Clay County Medical Society, February 9.
Dr. Russell L. Haden, "Focal Infection," Pittsburgh Diagnostic Clinic, Pennsylvania, February 2.

KENTUCKY

Hospital News.—The nurses' home at the Kentucky Baptist Hospital was partly destroyed by fire, February 4, with a loss of about $18,000. The occupants were all removed without serious injury.

Personal.—Dr. Herbert F. Wilson and Robert J Ertel have been reappointed members of the board of health of Covington for three years.——Dr. John R. Pryor, Mayfield, has been reelected health officer of Graves County.

Liquor Licenses Revoked.—An Associated Press item dispatched from Louisville, February 10, states that the liquor prescription permits of the following physicians had been revoked. The permits of three drug stores were also reported revoked and among the reasons given were irregularities in the issuing of prescriptions.

Dr. Henry T. Alexander, Fulton
Dr. William W. Gourley, Fulton
Dr. William Elmore, Lexington
Dr. Horace Luten, Fulton
Dr. George L. Major, Fulton
Dr. Isaac C. Young, Fulton

LOUISIANA

Physicians Fined on Liquor Charges.—Four physicians pleaded guilty in the federal court at Shreveport, February 28, it is reported, to a charge of conspiracy to violate the federal prohibition law, and were fined. As a result of an investigation conducted by the prohibition administrator, it was alleged that the defendants issued prescriptions in violation of the law outside of their medical practice. The physicians reported fined were:

Dr. Charles F. Howell, DeQuincy, $100.
Dr. Alvan H. LaFargue, DeQuincy, $100.
Dr. J. A. Johnson, $100.
Dr. David S. Perkins, Sulphur, $500.

March 2, Drs. Kirby A. Roy, Mansura, and Sambola J. Couvillon, Moreauville, were each fined $500 in federal court, it is reported, on charges of violating the national prohibition law with regard to the issuance of medical prescriptions.

MAINE

Bill Introduced.—House bill 1132 would require a doctor's certificate as a prerequisite to the issuance of a marriage license.

MARYLAND

Bill Introduced.—House bill 438 would require that lye containers be labeled "poison."

Personal.—Ging Hsi Wang, Ph.D., instructor at Johns Hopkins University Medical Department, Baltimore, has accepted a position as director of the Institute of Psychology at Sun Yet-sen University, Canton, China, and will leave about the first of May. Dr. Wang graduated at Johns Hopkins in 1923, and has been instructor in the medical school for three years.

MASSACHUSETTS

Bills Introduced.—House bill 1085 would increase the penalty for illegal practice of medicine. House bill 225 would safeguard the distribution and sale of dangerous caustic substances in packages for household use.

Personal.—Dr. Henry D. Chadwick, Boston, has been elected a member of the executive committee of the board of directors of the Massachusetts Tuberculosis League to succeed Dr. Parker M. Cort, who has moved to Hartford, Conn.

License Revoked.—The board of registration in medicine revoked the license and cancelled the certificate of Dr. Frank S. Parsons of Dorchester, March 3, following the presentation of evidence to the board that he was guilty of having performed an illegal abortion.

Society News.—Dr. John W. Hammond, Boston, addressed the New England Pediatric Society, March 11, at the Boston Medical Library on "Some Pediatric Experiences in China," illustrated with lantern slides; Dr. Hammond has been at the Peking Union Medical College in China for the last four years.——Dr. Howard M. Clute addressed the Essex South District Medical Society, Salem, February 2, on "Differential Diagnosis and Treatment of Thyroid Disease."——Dr. Paul N. Jepson, Boston, addressed the Hampshire Medical Society, March 2, on "Common Fractures of the Upper Extremities."

MICHIGAN

Personal.—Dr. Clyde C. Slemons, health officer of Grand Rapids, has been elected president of the state advisory council of health, succeeding Dr. Guy L. Kiefer who was recently appointed state commissioner of health.

Bills Introduced.—Senate bill 25 would prohibit the manufacture, sale, etc., of any vinous malt, brew, fermented, spirituous or intoxicating liquors, except for medicinal, scientific or sacramental purposes. Senate bill 208 would provide that all deaths without medical attention must be reported to the coroner. House bill 307 relates to the regulation of clinical thermometers.

MINNESOTA

Bill Introduced.—Senate bill 892 would establish a state board of examiners in the basic medical sciences.

Prize for Thesis in Clinical Medicine.—The Minnesota Society of Internal Medicine offers a prize of $250 for the best thesis in clinical medicine, received before Jan. 1, 1928, by any practicing physician in the state, exclusive of members of this society. Details may be obtained by writing the secretary, Dr. Edwin L. Gardner, 610 Yeates Building, Minneapolis.

Personal.—Dr. Walter J. Marcley, Minneapolis, has been designated head of the tuberculosis department of the new U. S. Veterans' Bureau Hospital which will open at Fort Snelling, April 9.——Dr. Harold J. Prendergast, St. Paul, has been appointed civil service medical examiner for that city.——Dr. Frank M. Moxon, Rochester, has been appointed assistant medical director of the Northwest Mutual Life Insurance Company at Milwaukee.——Dr. George T. Baskett, superintendent, Willmar State Insane Hospital, Willmar, has resigned to become superintendent of the Pennsylvania State Hospital at Wilkes-Barre.

MISSOURI

Bills Introduced.—Senate bill 238 would require the labeling of drugs derived from coal tar, and of medical preparations containing such drugs. Senate bill 239 would require that the date of manufacture be placed on all packages or containers of proprietary, patented, or trade-marked drugs or medicines. Senate bill 433 would provide for the construction and maintenance of a hospital adjacent to the penitentiary for the segregation of tuberculous convicts.

Supreme Court Denies Horton's Petition.—The Supreme Court of Missouri has denied the petition of Dr. Ray B. Horton to prevent the state board of health from trying him for revocation of his license, thus clearing the way for the state board to proceed with a trial delayed since September, 1925, by legal technicalities invoked by Horton's attorneys. The board charged that Horton had not attended the St. Louis College of Physicians and Surgeons and the Kansas City College of Medicine and Surgery the full period during the four years, as stated in his application for an examination.

Mental Hygiene Conference.—The Missouri Society for Mental Hygiene will hold a conference in the auditorium of the St. Louis Medical Society, St. Louis, April 4-5, to which the public will be invited to the six sessions. Speakers of national reputation will participate in the program, which will be constructed around the following subjects: (1) the normal child; (2) problems of adolescence; (3) behavior of normal children; (4) child-parent relationship; (5) special treatment cases; (6) what is the state doing to prevent mental disease. The object of the conference is to bring about a better understanding of the possibilities of mental hygiene.

NEW JERSEY

Bill Introduced.—House bill 177 would regulate the practice of hair dressers and cosmetologists, and would create a state board for licensing such occupations.

NEW MEXICO

Bills Introduced.—Senate bill 47 would create a board of examiners in the healing arts and would regulate the practice of such arts. House bill 357 would provide for a state board of chiropodist examiners and would regulate the practice of chiropody.

NEW YORK

Discussion of Medical Teaching.—The Medical Society of the County of Erie, Buffalo, devoted its March 21 meeting to a discussion of "Opportunities for Continuation of Medical Study." The speakers were superintendents or representatives of hospitals:

Dr. Milton E. Bork, Buffalo Eye and Ear Infirmary.
Dr. Timothy F. Donovan, representing Emergency Hospital of the Sisters of Charity.
Dr. Christopher Fletcher, Buffalo State Hospital.
Dr. Walter S. Goodale, Buffalo City Hospital.
Dr. Earle V. Gray, Gowanda State Homeopathic Hospital.
Dr. Renwick R. Ross, Buffalo General Hospital.

Hospital News.—A new 580 bed addition to Bellevue Hospital was opened, January 24, the total cost of building and equipment being about $4,000,000; ninety-six of the new beds are for tuberculous patients.——A $50 per plate donation dinner for the benefit of the Brownsville and East New York Hospital was attended by 1,200 guests at the Hotel Astor, March 6; the fund thus acquired is to be used to pay off the debt on the new training school and nurses' home which was opened, March 20.——Mrs. Willis F. Meschenmoeser, New Dorp, has donated a fully equipped pathologic laboratory to the South Shore Hospital, Staten Island, in memory of her husband.——The new three story, sixty bed St. Cecilia Maternity Hospital, Brooklyn, was recently dedicated.

Bills Introduced.—Senate bill 1302 would make it a misdemeanor to sell in New York City any patent drug, medicine, or preparation claimed as a remedy for human ailments, except in a drug store or pharmacy. House bill 1759 would provide that actions to recover damages for malpractice must be commenced within one year after cause of action has accrued. House bill 1771 would provide for the purchase and storage by health commissioners of malt beverages and wine, for sale to persons and corporations licensed to dispense them. House bill 1779 would prohibit a physician or surgeon employed by the state department to solicit or treat any claimant or operate any clinic. House bill 311 would provide for the sterilization of certain dangerous classes of society.

Society News.—At the January 25 meeting of the Queens County Medical Society, Jamaica, the matter of members volunteering to attend the camps of boy scouts for two weeks, or longer if desired, was brought before the society; Dr. Henry C. Courten read a paper on "Practical Points in the Treatment of Fractures," and Dr. Albert Vander Veer, Jr., on "Dust and Pollen Bone Diseases."——Dr. John E. Jennings addressed the annual meeting of the Otsego County Medical Society, recently, on "Cancer of the Breast" (illustrated).——The Physicians Art Exhibit will remain open until the first of April, the time having been extended for about two weeks.——At the annual meeting of the New York Electrotherapeutic Society, March 13, Dr. Richard Kovacs was elected president, and Dr. Madge C. L. McGuinness, secretary.

New York City

Liquor Licenses Revoked.—Prohibition Administrator Mills announced, March 14, the revocation of the liquor licenses of the following on account of irregular prescriptions:

Dr. Aaron Becker
Dr. Nathan Brumer
Dr. Abraham Cohen
Dr. Sylvan D. Lazarus
Dr. Emanuel V. Littauer
Dr. Louis J. Siegal
Dr. Samuel C. Trattler.

University News.—Samuel R. Detwiler, Ph.D., associate professor of anatomy, Harvard University, Boston, and Philip E. Smith, Ph.D., formerly associate professor of anatomy, University of California Medical School, have become full professors of anatomy at Columbia. Dr. Alfred Owre of the University of Minnesota has accepted the position of dean of the school of dental and oral surgery at Columbia.

Symposium on Evolution of the Mind.—The program of the April meeting of the New York Academy of Medicine will be a symposium on "The Evolution of the Mind." Dr. William W. White, superintendent, St. Elizabeth's Hospital for the Insane, Washington, D. C., will read a paper. Dr. Frederick Tilney will speak on "The Brain of Prehistoric Man," and James Harvey Robinson, "The Cumulative Nature of the Mind."

Personal.—Dr. Victor G. Heiser, director for the East, International Health Board of the Rockefeller Foundation, read a paper on "The Health Work of the League of Nations" before the American Philosophical Society, Philadelphia, February 4.——Col. Albert E. Truby, who was recently assigned as corps area surgeon at New York, was guest of honor last week at a dinner given by Dr. Graeme M. Hammond at the Athletic Club for the officers of Caduceus Post, American Legion.——Dr. Samuel B. Burk has been promoted to a lieutenant commander in the medical reserve corps of the navy.

Baltimore Medical Club.—The Baltimore Medical Club of New York City will hold its annual dinner at the Hotel Astor, Thursday evening, April 21. Dr. Dean Lewis, surgeon-in-chief of the Johns Hopkins Hospital, Baltimore, will be the principal speaker. Dr. Oswald S. Lowsley of New York will speak on "Medical Conditions Abroad in the Last Five Years." Governor Ritchie is expected to attend. Dr. David E. Hoag is president of the club; Dr. Dougal Bissell, vice president, and Dr. William B. Pritchard, chairman of the executive committee. Dr. Thomas K. Davis has been appointed chairman of the reception committee, and Dr. Louis Winfield Kohn, chairman of the entertainment committee. The membership is made up of physicians practicing in New York City and its environs, who are graduates of medical colleges of Baltimore.

OHIO

Bills Introduced.—House bill 269 would regulate the practices of barbering, manicuring, massaging and chiropody. House bill 184 would require the labeling of all drugs.

Infant Mortality at Canton.—Telegraphic reports to the U. S. Department of Commerce from sixty-eight cities with a total population of about 30 million, for the week ending March 5, indicate that the highest infant mortality rate (142) was for Canton. The infant mortality rate for Canton for the year 1925 was 76.

Personal.—Dr. Paul H. Beaver, Leetonia, has resigned from the board of health of Columbiana County, and has been succeeded by Dr. Harry Bookwalter of Columbiana.——The position of director of the department of communicable diseases in the Akron City Health Department, which was formerly held by Dr. Frank V. Dunderman, has been abolished.

Proposed Medical Center at Cleveland.—With Western Reserve University School of Medicine as a nucleus, a great medical center is being developed at Cleveland. A group of new buildings is to be erected at a cost of several million dollars, which will include general and special hospitals, research institutions and a nursing school. The institutions in the group, including those now in operation or proposed, will be affiliated with the university, but will have their own boards of trustees and their own endowment funds. The plan, announced February 12, after about five years of quiet planning, includes the erection on the campus of a new Lakeside Hospital, eight stories high, with 250 beds, facilities for research, and all modern devices for the welfare of patients. A new Rainbow Hospital will be erected on the present site of Rainbow Hospital, south of Mayfield Road, South Euclid, at a cost of about $350,000 for building and equipment; this building is planned to afford a maximum exposure to the sun in all wards and rooms, and, at the same time, to permit segregation of boys and girls. Rainbow Hospital is devoted to the care of convalescent children, both medical and surgical. There is to be in the group a new nurses' dormitory, between the new Lakeside Hospital and Euclid Avenue, with accommodations for 400 nurses, sufficient for those on duty at the Lakeside and the Babies and Maternity hospitals. The new pathologic institute, for which the Rockefeller Foundation recently granted $750,000, will soon be under construction. The Allen Memorial Medical Library, owned by the Cleveland Medical Library Association and quite near the medical school, was opened a few months ago. An appeal for funds to finance the new structures probably will be made to the public in Cleveland and other cities in the Western Reserve. Thus, all that science can afford will be provided for the patient, and there will be the most modern equipment and ideal working conditions for practitioners, students and nurses.

PROPOSED MEDICAL CENTER AT CLEVELAND

A—Proposed Nurses' Dormitory
B—Proposed Private Hospital
C—Proposed Lakeside Hospital
D—Present Maternity Hospital
E—Proposed Pathologic Institute
F—Present Babies Hospital
G—Present Medical School
H—Present Power House
I—Proposed Medical School Dormitory
J—Present Dental School

The Allen Memorial Medical Library is the building at the extreme left; the Cleveland Academy of Medicine has its home there.

Society News.—Dr. Carl W. Eberbach, Ann Arbor, Mich., addressed the Montgomery County Medical Society, February 18, on "Diagnosis and Treatment of Pyelitis."——Dr. Leora G. Bowers, Dayton, president, Ohio State Medical Society, addressed the Academy of Medicine of Lima and Allen County, January 25.——Dr. Frank J. Gallagher addressed the Academy of Medicine of Cleveland, February 18, on "Lung Abscess—Report of Cases" (lantern slides). Dr. Roger G. Perkins, professor of hygiene and preventive medicine, Western Reserve University School of Medicine, Cleveland, addressed the Summit County Medical Society, Akron, February 1, on "Present Knowledge of Etiology of Scarlet Fever"; physicians were present from Cleveland, Barbaton and other neighboring cities.——R. L. Kahn, Sc.D., immunologist, bureau of laboratories, Michigan State Department of Health, Ann Arbor, addressed the Columbus Academy of Medicine on "The Rôle of the Kahn Test in Clinical Medicine."——The "hearty health for women week," conducted last year by the Academy of Medicine of Toledo and Lucas County, proved so successful that the academy held a "hearty health for men week" this year. These periods are devoted to lectures by physicians on topics of special interest to men and women. ——Dr. Arthur G. Cranch addressed the Academy of Medicine of Cleveland, March 18, on "Artificial Respiration," and Dr. Harry E. Stewart, New Haven, Conn., on "The Place of Modern Physiotherapy in Medical Practice."——Dr. John H. Wolfe, DeGraff, will be host to members of the Logan County Medical Society, April 1, at a dinner celebrating his fiftieth year in the practice of medicine.

OKLAHOMA

Bills Introduced.—Senate J. R. 16 would appropriate $5,000 as an emergency fund for the use of the state department of health to prevent the spread of contagious diseases. House bill 351 would create a county board of hospital control in each county wherein a hospital is operated.

PENNSYLVANIA

Personal.—Dr. Robert A. Keilty has resigned as pathologist at the Geisinger Hospital, Danville, and will be succeeded by Dr. Kenneth Fowler, Ann Arbor, Mich.——Dr. Arthur C. Morgan, Philadelphia, president-elect of the Medical Society of the State of Pennsylvania, addressed the Lawrence County Medical Society, Newcastle, March 3.

Bills Introduced.—House bill 1386 would authorize the sterilization of mental defectives, including idiots, imbeciles, and feebleminded, confined in state institutions. House bill 1387 would provide for the examination by a physician of all applicants for marriage licenses. House bill 1492 would consolidate the state board of medical education and licensure and the state board of osteopathic examiners.

Philadelphia

Dr. Theobald Smith Awarded Medal.—The Philadelphia Pathological Society will award the William Wood Gerhard Gold Medal, April 21, at the annual conversational meeting,

to Dr. Theobald Smith, director, department of animal pathology, Rockefeller Institute for Medical Research, New York, who will deliver the annual lecture on "The Passing of Disease from One Generation to Another and the Processes Tending to Counteract It." The medal was established by the Philadelphia Pathological Society in 1925 as an award for eminent work in pathology.

University News.—A gift of $25,000 to the Henry Phipps Institute of the University of Pennsylvania for research work for the year beginning July 1 was made by Charles H. Ludington, Ardmore, with the provision that the institute raise $50,000.——The fund for the further development of the University of Pennsylvania medical facilities reached the $1,235,000 mark, February 24; a total of more than $3,000,000 is sought.——The faculty and members of the clinical staff of the Woman's Medical College of Pennsylvania celebrated the seventy-seventh anniversary of the founding of the college at a dinner, March 9, at the Hotel Rittenhouse.

Personal.—Dr. William G. Spiller has resigned from the neurologic staff of the Philadelphia General Hospital.—— Dr. Dorothy Case Blechschmidt has been appointed chief in surgery to the staff of the Woman's Hospital, Philadelphia. ——Drs. Edward H. Bedrossian and John V. Allen, Jr., have been selected by the U. S. Department of Commerce as air medical examiners.——Drs. de Schweinitz, Deaver, Hirst, Pepper, Sailor, Stengel and Clark have issued invitations for an "at home" in honor of Dr. and Mrs. Josiah C. McCracken, March 26; Dr. and Mrs. McCracken are on leave after twenty years' service in China, and expect to return shortly to Shanghai.——Dr. Lawrence A. Flick was reelected president of the White Haven Sanatorium Association, March 15.

RHODE ISLAND

Bill Introduced.—House bill 769 would amend the medical practice act so as to allow osteopaths to practice such subjects as they are taught in osteopathic schools, and would create a board of osteopathic examiners.

SOUTH CAROLINA

Bill Introduced.—House bill 717 would impose an occupational license tax on the various occupations.

TENNESSEE

Bill Introduced.—Senate bill 284 would create and establish a division of tuberculosis control in the department of public health.

TEXAS

Bill Introduced.—House bill 318 would require physical examination of hotel and restaurant employees.

Chiropractor Convicted.—M. B. McCoy, chiropractor of Paris, Texas, was found guilty by a jury, recently, it is reported, for violation of the state medical practice act, and was sentenced to pay a fine of $50 and to serve fifteen days in jail.

Society News.—Dr. Scott C. Applewhite addressed the Bexar County Medical Society, January 6, on "Antigen Treatment of Cataract," and Dr. Raleigh L. Davis on "Renal Tuberculosis," illustrated with lantern slides.——The Cooke County Medical Society met at the home of Dr. and Mrs. Claud B. Thayer, Gainesville, January 12; Dr. Edwin Davis, Fort Worth, read a paper on "Prevention of Intracranial Hemorrhage."——Dr. Robert L. Ramey addressed the El Paso County Medical Society, February 17, on "Fractures of the Elbow and Forearm," illustrated with lantern slides.—— Dr. Vincent P. Randolph, Cibolo, addressed the Guadalupe County Medical Society, January 5, on "The Financial Side of Medicine."——The Tarrant County Medical Society had fifty-four members present at the January 18 meeting; Dr. Frank L. Snyder read a paper on "Cholecystography in a Typical Gallbladder Disease," and Dr. Robert G. Baker, "Generalized Bone Metastasis from Breast Cancer."

WASHINGTON

Bath-House Proprietor Practiced Medicine.—William Skinas was fined $50 recently in the justice's court at Seattle on a charge of practicing medicine without a license. Skinas, who conducted a bathhouse, was arrested several weeks ago at the request of Peter Apostolou who complained that his sister died after receiving a course of bath treatments at the Skinas bath-house. Testimony at the hearing indicated that the patients' death was due to tuberculosis. The court held that Skinas, although acting in good faith, was technically guilty.

Governor Signs Basic Science Bill.—Governor Hartley signed the basic science bill, March 1; the law becomes effective, June 10. There were only two votes in the senate and twenty-seven in the house against the bill. The new law establishes a committee of five members from the faculty lists of the University of Washington and Washington State College to conduct examinations of all persons applying for licenses to practice medicine, osteopathy, chiropractic and drugless therapeutics. The committee shall conduct written examinations in anatomy, physiology, chemistry, pathology and hygiene. Applicants shall present to the director of licenses evidence of their qualifications to take the examination and if considered satisfactory, they shall be entitled to be examined in the basic sciences after paying a fee of $10. After the applicant has passed the examination with an average of not less than 75 per cent, and a grade in each subject of not less than 70 per cent, the committee shall issue a certificate which the applicant shall file with the state treasurer, together with his application for a license in his particular branch of healing. The law shall not be construed in any way to interfere with the practice of religion, or to regulate any kind of treatment by prayer.

GENERAL

Plan to Provide New Medicinal Whisky.—With the failure of the medicinal spirits bill to pass Congress, the treasury department now plans a voluntary consolidation of whisky distilleries under existing federal laws for the manufacture and distribution of new medicinal whisky. The present arrangements would provide a small number of responsible and powerful groups, the whole plan to be developed on the basis of cooperation among the groups and the government. Great responsibility will be placed on the few large organizations charged with the manufacture and distribution of such whisky if this plan is carried out; this seems to be the only method available at present.

Salaried Interns.—The U. S. Civil Service Commission announces a competitive examination for junior medical officer (intern), applications for which must be filed not later than June 30 at Washington, D. C. There are vacancies in the U. S. Veterans' Bureau hospitals throughout the country and other positions requiring similar qualifications. The intern's salary in the field service of the Veterans' Bureau is from $1,860 to $2,400 a year, depending on the qualifications of the appointee as shown in the examinations and the duty to which he is assigned. Some of the duties enumerated are: history taking; physical and mental examinations; admitting patients; ward rounds; minor surgery; as assistant in major surgical operations; dressings; anesthetics, and routine laboratory tests. Competitors will not be required to report for examination at any place, but will be rated on their education, training and experience.

Bulletin on University Athletics.—The Carnegie Foundation for the Advancement of Teaching is engaged in a study of American school, college and university athletics. A staff member of the foundation has spent several months in Great Britain gathering materials for a descriptive study of athletics in British educational institutions, and the result of this study has been published in bulletin 18. The preface is written by Henry S. Pritchett, president of the Carnegie Foundation for the Advancement of Teaching, and the remainder by Howard J. Savage, Ph.D., staff member of the foundation. Among the subjects discussed are "Alumni and Athletics"; "Heavy Schedules in Schools"; "Publicity and University Sport," and "Endowment of College Athletics at Cambridge." Copies of the bulletin and the twentieth annual report of the foundation which deals with American college athletics may be had on application to the office of the foundation, 522 Fifth Avenue, New York.

Statement on Vaccination by the Surgeon Generals.—The circulation of false statements to the effect that vaccination against smallpox may cause syphilis has led to the issuing of a statement that syphilization as a result of vaccination does not occur. The statement is signed by Surg. Gen. Merritte W. Ireland, Surg. Gen. Edward R. Stitt, U. S. Navy, and Surg. Gen. Hugh S. Cumming, U. S. Public Health Service. Since 1917 the U. S. Army has vaccinated about 4,700,000 of its personnel; the U. S. Navy has vaccinated about 950,000 members of its personnel, and of this total, 5,650,000 persons, not one of them ever developed syphilis as a result of vaccination, and in not one of them was there ever any suspicion of

syphilis in connection with vaccination. During this same period, the U. S. Public Health Service vaccinated 2,918,748 persons in connection with its quarantine, immigration and hospital work, and no one has ever alleged that any particular person vaccinated by the public health service has contracted syphilis as a result of vaccination. During the last ten years more than 2,000,000 persons, including school children, have been vaccinated by state and local health authorities in cooperation with the U. S. Public Health Service. Thus a grand total of 10,568,748 vaccinations has been recorded by the government medical services, and not one of the three surgeon generals has ever received an allegation or a statement charging that any particular person of this number has contracted syphilis as a result of vaccination.

CANADA

Large Outbreak of Typhoid at Montreal.—The epidemic of typhoid fever which began in Montreal March 4 had on March 18 amounted to several hundred cases, the total number since January 1 being reported as 531. The new cases reported March 18 numbered eighty-eight.

General Fotheringham Honored.—Friends in the medical profession and the army presented to Dr. John T. Fotheringham of the University of Toronto Faculty of Medicine, a portrait of himself in uniform, painted by Forster in accordance with a bequest in the will of the late Dr. George S. Strathy. Dr. Duncan A. L. Graham presided at the presentation exercises, and among the speakers were Dr. James A. Temple, Prof. Maurice Hutton, Sir William Mulock and Generals Birkett and Otter. Dr. Fotheringham, who was formerly director general of the Canadian Army Medical Corps, on receiving the portrait presented it to the University of Toronto.

FOREIGN

New German Bureau to Provide Periodic Examinations.—Five of the leading life insurance companies of Germany have established a central bureau in order to provide periodic health examinations at the expense of the bureau and other health service for the wage earning class. Dr. Otto Neustätter, formerly director of the Deutsches Hygiene-Museum in Dresden, and general secretary of the federal committee for education of the public in hygiene, has been appointed director of the new bureau with headquarters in Berlin. The movement is considered in Germany to be a new form of medical activity, which will rejuvenate the usefulness of the family physician and reintroduce more of the individual factor in health instruction. It is also recognized that, in forming this bureau to provide this sort of health service, the Germans are following a precedent set in the United States several years ago. The advisory council of the bureau will be composed of representatives of various official boards, medical societies, welfare organizations and other prominent persons, and a list of the appointments to these positions will be published later.

Yale-in-China Medical School Closed.—The Hunan-Yale College of Medicine at Chang-sha and the nursing school have been closed. A correspondent in the New York *Times* stated that it is impossible under the existing conditions of communism and of disorder in the province to conduct educational institutions with high standards of work and discipline. Most of the faculty have left Chang-sha, three of the most important members remaining in other places hoping that the radical wing in Chang-sha will lose control and that their work may be resumed. The Hunan-Yale Hospital is still functioning under Chinese physicians. The attitude of the board of trustees is that the institution must be continued and made as permanently useful as possible, and that the ideals and methods may be modified to meet more adequately the needs of a new China. They believe that an effort should be made to maintain a Chinese staff of at least three members in addition to the American staff now on the field, and that the staff be authorized to make such arrangements as they consider desirable for the purpose of using the hospital and other buildings for the public good. The Hunan-Yale College of Medicine is a joint enterprise between the Yale Mission and the Hunan Yu-Chun Educational Association, founded in 1914. It was the first cooperative enterprise of its kind between the Chinese and Americans, and both parties to the agreement supplied funds for expenses. The Rockefeller Foundation, since 1915, has made regular grants and has provided a laboratory building for the premedical sciences. Certain missions contributed members of the faculty and some heads of departments were Chinese.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 5, 1927.

The Danger of Irradiating Milk

In a letter to the *Times*, Dr. J. C. Drummond, professor of biochemistry at the University of London, sounds a word of warning in regard to the irradiation of milk by ultraviolet rays, to which it recently devoted a leading article. He admits that the nutritive value of certain foodstuffs, including milk, from the standpoint of their value in the prevention of treatment of rickets, can be considerably increased by exposure to the radiations of ultraviolet lamps by a change either in the cholesterol or in some closely related body. But it is insufficiently recognized by many who are interested in the practical application of these facts that the short wave-length radiations of the ultraviolet part of the spectrum are extremely powerful agents. Milk which has been exposed to the radiations of a mercury vapor lamp for as short a time as five minutes not only becomes unpalatable, in that it acquires an unpleasant, tallowy odor, but suffers chemical changes highly undesirable from the standpoint of nutrition. Of these, one is the destruction of vitamin A by oxidation. In Germany, and, to a less extent, in this country, the treatment of rachitic children is being carried out with irradiated milk. If the irradiated milk forms the chief part of their food, the children will receive an inadequate supply of vitamin A, and may therefore show the retarded growth and lowered resistance due to insufficiency of this substance in the dietary. If the irradiated milk is being employed medicinally as an antirachitic, it is hard to understand why it should be used in preference to the more potent and not much more unpalatable cod liver oil. A number of other foodstuffs might be used after irradiation as sources of the antirachitic vitamin that do not appear to suffer deleterious changes during the treatment with the light. Thus, many of the vegetable oils contain the precursor of the antirachitic vitamin, but little, if any, vitamin A. Such oils, after irradiation, are antirachitic; they remain relatively palatable, and might be used medicinally in cases in which cod liver oil is not well tolerated. The tendency to apply somewhat generally the results of laboratory research before they are ripe for practical use is to be regretted, and considerable experimental work remains to be carried out before the conditions have been determined under which so labile and complex a foodstuff as milk can be subjected to the powerful action of ultraviolet or other irradiation without serious impairment of nutritive value. A more promising line of investigation, and one along which considerable progress has already been made, consists in researches, carried out at the national institute for research in dairying at Reading University, on the problem of so feeding dairy herds that the milk yielded will show a high vitamin value throughout the year.

Joseph Jackson Lister, F.R.S.

Like the Darwin family, the Lister family has been remarkably prolific in scientific ability. One member, Joseph Jackson Lister, F.R.S., has just died at the age of 69. His grandfather, Joseph Jackson Lister, was a pioneer in optical science, and was famous chiefly for improvements in the compound microscope. His uncle was the founder of antiseptic surgery. His father, Arthur Lister, F.R.S., was distinguished as a botanist, chiefly in the group of *Mycetozoa*. Born in 1857, Joseph Jackson Lister was elected a fellow of St. John's College, Cambridge, and joined the brilliant group of young zoologists that gathered round Frank Balfour and Adam

Sedgwick in the last decades of the nineteenth century. The rest of his life he spent at Cambridge, first in his own college, and after his marriage, in 1911, at Grantchester. Unfortunately, his labors were much interrupted by bad health. His most important work, which gained him the fellowship of the Royal Society in 1900, was an elaborate study of the Foraminifera. Two forms or phases were known to occur in a number of species, and the suggestion had been made that these might represent males and females. Lister's observations disproved this. He established the fact that both phases were capable of reproduction, and that the phenomenon was one of alternating generations. He also suggested that possibly sexual reproduction occurred in one of the two generations, but this part of his conclusions has not been altogether accepted. Lister wrote the article on the slime fungi (*Mycetozoa*) in the eleventh edition of the "Encyclopedia Britannica," basing his account largely on the work of his father. He contributed the sections on Foraminifera and *Mycetozoa* to Sir E. Ray Lankester's "Oxford Zoology," and on Arthropoda to Adam Sedgwick's "Textbook of Zoology."

A Criticism of Spahlinger

The boosting of Spahlinger by the lay press has been described in a previous letter, but one journal, the *Daily Express*, did not join the chorus of credulity. It sent a special correspondent, Mr. Stanley Bishop, to Geneva to investigate and he has brought to light a good deal which, to say the least, is not encouraging. He finds that tuberculosis is not the only disease in which Spahlinger is interested. Once he had an antityphoid serum for which high claims were made. During the war he produced antitetanus serum for the Russian army. There was some dispute as to payment, and large quantities of this serum repose in the cellars of his laboratory. It has also been claimed that some of Spahlinger's "ferments" revive youth and vitality. Certain "cures" have been published in the medical press and in a recent book by Mr. R. G. Lovell, an English architect, who assists Spahlinger financially and directs his press campaign. Mr. Bishop asked Spahlinger for a list of recent patients who had returned to work in England and so could be followed up. He was promised them, but in spite of reminders and giving a guarantee that the names would not be published without the permission of the patients, he could not obtain them. Investigation of "cures" in Switzerland, however, was possible. The case of a certain woman is reported in the Spahlinger publications as a cure. In one document put before a Lancashire and Cheshire committee of physicians interested in the treatment it is said: "After four months' serum treatment, all signs of activity had disappeared." Mr. Bishop found that the woman was dying. She was dictating a letter from her death bed: "Do not let patients come out for the Spahlinger treatment." In another case of a woman who is still gravely ill, there was published: "After two years of Spahlinger partial serum treatment, the disease is completely arrested." She said to Mr. Bishop: "Anything you can do to save people from coming under the treatment would be a great service. I know what I have suffered." An ex-army officer was written about thus: "Complete cure effected"; yet while this was in circulation he died. Some dispute was made whether he died from tuberculosis, but the British ministry of pensions inquired into the matter through the British government officials in Switzerland and were satisfied that death was due to tuberculosis. Other similar "cures" are described. Professor Sahli of the University of Berne says, "As far as I know Swiss patients are not treated by the Spahlinger method because nobody thinks it of any value. It is not employed by Swiss doctors unless it be that they allow patients to dictate their treatment, which is not customary and is a liberty which only foreigners assume occasionally. I became acquainted with Spahlinger many years ago when he visited me to start an antityphoid serum which he declared was infallible. He impressed me as a person completely ignorant of medicine. So far as I know, nothing more has been heard of the Spahlinger typhoid serum, just as nothing more will be heard of the tuberculosis serum. In several patients who have come to me after having been treated by Spahlinger I have never seen any benefit, but considerable damage."

Dr. Halliday Sutherland, a tuberculosis specialist, has written to the *Daily Express* saying that it has rendered a service to humanity by investigating Spahlinger's claims, and that he formed the same opinion of them as long ago as 1914. In that year Spahlinger came to see him and stated that he had discovered an infallible cure for tuberculosis which was available for any cases he might select. Dr. Sutherland said he could not use the remedy unless its nature was declared. Spahlinger at first declined and later said that it was a ferment extracted from the mononuclear cells of the blood. Dr. Sutherland agreed to give it to a man, aged 23, dying of tuberculosis. The injection was given, and within five minutes the patient had a rigor and the signs of protein shock. He died a week later, but the remedy did not appear to hasten the end.

Research on Foot-and-Mouth Disease

The second progress report of the foot-and-mouth disease research committee has been issued by the ministry of agriculture. The causal microbe cannot be seen, and can be recognized only by its effects on a susceptible animal, and all experiments involve tests by inoculation to discover its presence and activity. Research into this disease is therefore peculiarly tedious and discovery necessarily slow. When definite indications in any direction have been obtained by work with guinea-pigs, the experiment, whenever possible, has been repeated on a smaller scale in large animals. In spite of some difficulties involved in changing the habitat of the virus from one kind of animal to another, several observations have already been confirmed on cattle after having been made on the guinea-pig in the first instance. The results of experimental investigations into the conditions under which the virus could remain active outside the animal body have not, in the past, encouraged belief in its persistence in a dry state in nature. On the other hand, field observers have suspected transmission by the merest traces of dried discharges on clothes or boots of human beings, the hair of animals, or on grass or other fodder introduced from the outside into a given country or farm. Experiments have been undertaken to determine for how long the virus may be recovered from the carcasses of cattle and pigs which have been slaughtered in the early stages of foot-and-mouth disease, dressed for the market and either chilled or frozen, and in the carcasses of pigs when dry and wet salted. The virus was not recoverable from the flesh after rigor mortis and its accompanying considerable development of acidity. The blood, however, whether the carcasses were frozen or chilled, was infective for from thirty to forty days and the bone marrow for still longer periods; in two instances, for seventy-six days. After dry or wet salting the virus was recovered from the bone marrow after forty-two days. The disease was readily conveyed to pigs by feeding them on crushed bones from the frozen carcasses containing infected marrow. Burial of the carcasses with lime did not shorten the period of infectivity. In some of the brine mixtures ordinarily used by the trade, the virus was not recovered from the feet after five days, but in others it was present after a month. The ministry of agriculture has issued an order which forbids the feeding to pigs and other animals except after cooking, of swill which contains, or has been in contact with, broken meats, offal or bones.

PARIS

(From Our Regular Correspondent)

Feb. 23, 1927.

Varying Opinions on the Value of the Mikulicz Drain

At several recent sessions of the Societé de chirurgie, discussion has arisen over the subject of postoperative abdominal drainage according to the Mikulicz technic. Prof. Jean Louis Faure is an ardent advocate of this method. He believes that many authentic recoveries from uterine cancer, without recurrence over a long period of years, have been due to postoperative drainage. In addition, it gives security after every operation on the intestine. The two chief opponents of Faure are Prof. Pierre Duval and Professor Lecêne, who regard the Mikulicz drainage as useful if there is previous infection of the operative field, but refuse to adopt it as a routine measure in all abdominal operations, for they allege that it predisposes to eventrations. Others, such as M. Dujarrier, consider it useless in aseptic operations. Professor Faure believes there is no such thing as an aseptic abdominal operation, since there are always infective micro-organisms in the air. Infection is certain to occur if the digestive tract is opened, no matter how many precautions are taken. M. Duval alleges that the Mikulicz drainage procedure is liable to open up intestinal sutures when the drain is removed. Faure states in defense that, if such a thing happens, it is because the drain and the enveloping gauze are removed too soon, when fresh adhesions have formed, instead of at the end of ten days, as he would recommend.

Prophylaxis of Myopia in School Children

All health inspectors in schools are astonished to note the growing prevalence of myopia in children. The number of children who today wear glasses is startling. Examining the pupils of the large Ecole Polytechnique, M. Perrin found 50 per cent myopic. According to Dr. Colin, 6.7 per cent myopic subjects are found among the pupils in the elementary schools; 10.3 in the intermediate grades; from 19 to 26 per cent in the secondary schools (*lycées*), and 59 per cent in the universities. It has been established that myopia develops in pupils as a result of poor illumination of study halls, both during the day and at night, and especially from the bad habit of most children of bending too low over their desks or tables and getting their eyes too near their work while reading or writing. Ophthalmologists have established that, to avoid injury to the eyes, the distance separating the eyes from the printed or written test should never be less than 33 cm. According to a report issued recently by Dr. Ferrier, teachers and parents should see to it that children while studying hold the body and head erect and maintain a sufficient distance between their eyes and their books or papers. Correction of the posture will be furthered by adequate illumination, and furniture properly adjusted to the body of the pupil. It is advisable to post on the walls of school rooms illustrations indicating the correct posture, together with a short description of the needed requirements. Beginning myopia, although it diminishes visual acuity sometimes by a third or a half, often passes unobserved. It would be well, therefore, to verify from time to time the vision of all pupils, even of those who appear to have normal sight. This can be easily done by parents or teachers by means of graduated letters or optometric charts.

Social Service in Hospitals

Five years ago, a private society was founded having as its object the development in women of a better knowledge of the care of patients, children and the new-born. The work of the society is distinct from that of the professional schools for nurses. The new organization appeals only to women who wish to secure instruction by spending a few hours in various hospital services, one or more times each week. In the interval, courses are arranged to give them instruction in general hygiene and hygienic legislation. After a time, those who have made the best progress are allowed to assist the regular nurses in the hospital services. M. Mourier, director of the *Assistance publique*, or bureau of public charities, has stated that these volunteer nurses have saved the bureau considerable sums in recent years. The saving for the year 1926 amounted to 3,920,428 francs ($156,000).

The Students' Sanatorium

A large sanatorium has been established for the exclusive use of university students who show the first signs of tuberculosis. As the site for the institution, a beautiful plateau region in the mountains near Grenoble (Isère) was selected. Funds for the enterprise were collected by private subscriptions, aided by contributions from the government, the municipal council of Paris and the various universities. Thus far 3,690,529 francs has been collected. The institution will not be completed before next year, as building operations in this mountainous and often snow-clad region are interrupted for five months of the year. Further contributions are needed to complete the buildings and to establish a fund to cover the cost of administration. The outlook, however, is very favorable, as subscriptions are pouring in from all directions.

Rumors of Plague in France

A daily paper carried recently an account of a young woman in Lille who had been bitten by a Siamese cat, presented to her by an officer who had returned from the East Indies, whereupon plague was said to have developed, with the result that the town and the whole countryside were thrown into an uproar. The story was a fabrication, but the rumor was soon spread that several cases of plague were being treated secretly in the St. Louis Hospital at Paris. The Pasteur Institute experienced considerable difficulty in refuting the rumor, although it insisted that no case of plague could occur in French territory without the institute being informed at once by the prefect of the department.

ITALY

(From Our Regular Correspondent)

Florence, Dec. 21, 1926.

The Congress of Surgery

The Società italiana di chirurgia recently held at Padua its thirty-third national congress under the chairmanship of Prof. Mario Donati.

The chief speakers on the topic "Surgery of the Abdominal Portion of the Sympathetic System" were Professors Donati and Vannucci (Padua). Among others, the following conclusions were reached: It is not possible to section solely the afferent paths of the sympathetic. It is difficult to section solely the efferent paths. Surgical treatment has been tried in bronchial asthma but, as a rule, asthmatic attacks are not greatly influenced by surgical interventions.

Surgical treatment of angina pectoris has always resulted in a mortality (early and remote) of from 15 to 20 per cent. Section of the sympathetic nerve paths may be useful in numerous disturbances of the digestive system, both in the treatment of motor and secretory insufficiency and in control of pain.

Numerous surgical interventions on the nervous apparatus of the kidney and the urinary passages have produced fairly good results. It has been demonstrated that kidney function may remain satisfactory, on the whole, even though the kidney has been completely denervated. Useful results have been

obtained from nerve surgery in its application to the female reproductive organs.

Many attendants presented communications on the first main topic, among whom were Pieri, who reported his results in nineteen interventions on the sympathetic system; Paolucci, who presented his experimental contribution to the knowledge of the anatomy and pathologic physiology of the intestinal sympathetic apparatus; Galli, Polano and Rinaldi, who reported the results in twenty-four cases of paravertebral anesthesia in which they operated, and Chiariello, Bloch, and Dogliotti.

In the discussion that followed, Schiassi reported on several cases of gastric and duodenal ulcer in which he had operated according to his method of interruption of the nerve paths. These cases were announced at the close of the preceding congress, but their discussion was delayed until a longer period had elapsed since the operation. Several patients operated on since 1923 are in excellent condition.

The second topic on the program, "Surgery of Pulmonary Tuberculosis," was considered in collaboration with the Società di medicina interna, and was mentioned in the account of that congress (THE JOURNAL, Feb. 26, 1926, p. 662).

At a special session, the assembly elected Prof. Ambrogio Ferrari as the new president of the Società di chirurgia. Parma was chosen as the meeting place of the next congress. The topics selected for discussion were (1) the evaluation of the resistance of the patient to be operated on and the means of diminishing the operative risk, and (2) habitual constipation: pathogenesis and treatment (in collaboration with the Società di medicina interna).

Before the congress closed, a bust of Edoardo Bassini was dedicated in the Clinica chirurgica of Padua.

Hygienic Control of Manufacture of Bread

The *Gazzetta Ufficiale* publishes a decree of the head of the government, under date of December 10, relative to the hygienic control of flour and the manufacture of bread, which is entrusted to the authorities, the health officers, and, in general, to the personnel attached to the hygienic services of the communes. Whenever any doubt is felt as to whether the standard requirements have been complied with, samples of flour, bread, and sometimes even of grain, are taken for analysis in authorized laboratories.

Antityphoid Vaccination Compulsory for Certain Classes of Citizens

A recent decree of the prime minister provides that antityphoid vaccination shall henceforth be obligatory for (1) persons employed in the care of patients or in cooking departments, disinfection services, laundries and cleaning services of hospitals, sanatoriums or other therapeutic institutions, public or private; (2) personnel employed in public laundries, in the transportation of the sick, or in disinfection services, and (3) personnel employed in the water department, or in the collection and sale of water. The prefect of a province, at the request of the provincial physician, may require the application of antityphoid vaccination to (1) the whole population under his jurisdiction in case of a threatened epidemic; (2) the personnel of those public services which, from their nature, may be particularly exposed to the danger of contagion, and (3) all other cases in which an intense prophylaxis of typhoid is deemed necessary. The vaccinations are carried out under the care of the communes, or of the individual societies when it is a question of private bodies. The physician who performs the vaccination is compelled to give information to the health officer of the commune, indicating, in addition to the condition of the person vaccinated, the source of the vaccine employed, and the mode of its administration.

GENEVA

(From Our Regular Correspondent)

Feb. 18, 1927.

Postoperative Pulmonary Complications

Drs. Perrier and Charles Saloz recently discussed postoperative pulmonary complications at a meeting of the Geneva Medical Society. The frequency of pulmonary complications is about 7 per cent after abdominal operations, and there is a mortality of 30 per cent. Pulmonary embolus is rare in operations on the neck and limbs, but occurs frequently in operations undertaken between the diaphragm and the perineum. The lungs react by an area of congestion, infarct, gangrene, pneumonia or bronchopneumonia, processes that may be slight or very serious.

Many factors have been invoked in the etiology of these complications: first of all, ether narcosis and aspiration pneumonia; yet the same percentage is to be found following local anesthesia. Lesions of the abdominal vagus are supposed to cause neuritis, which in turn reacts on the pulmonary branches of this nerve. Both causes are certain, but they are simply adjuvant; the primal factor is infection from embolus. The more the embolic infarct is infected, the greater its danger. On the other hand, the patient's resistance, his age, general physical condition, and the gravity and length of the operation come into play. Proper temperature of the operating room is necessary, while contamination of a patient during an operation by an onlooker with "a cold in the head" is probably not uncommon.

Complete examination of the patient, and choice of the operative technic and of the anesthetic are highly important. Examination of the patient requires the aid of a physician, a radiologist and a laboratory expert. Local or regional anesthesia is the safest, after which come spinal anesthesia, then ether and lastly chloroform. Warming the liver by diathermy during laparotomy has been recommended in America, but introduction of warm fluid into the stomach will accomplish the same object. Diathermy raises the temperature of the liver above normal. An operation divided into two or more parts diminishes the risk. Exogenous infection has been thoroughly studied, but the surgeon should be suspicious of endogenous infections.

As part of the postoperative care the heart should be watched, and it is to be recalled that the seventh, eighth, twelfth and fourteenth days are the critical ones. The patient is to be kept immobilized through these days. Herudinization remains to be studied; the use of coagulants may give rise to effects contrary to those desired. Glucose serum is very useful, as are likewise emptying of the intestine and the maintenance of diuresis. The signs of a thrombus undergoing formation are uncertain and deceptive; so-called neurologic or rheumatic pains after operation arouse suspicion, as do likewise little rises of temperature and, above all, a high pulse rate without elevation of the temperature.

Laws Governing Sale of Narcotic Drugs

The following are the new federal laws for the sale of narcotic drugs: Pharmacists must forward to the federal authorities a monthly list of physicians and hospitals to whom they have supplied these drugs. Physicians who have their own pharmacies are to keep prescriptions on file, and report on control sheets the total quantity of all narcotic drugs they have dispensed during the month. The cantonal authorities may require physicians and hospitals to show their control registers periodically and it is only when these reveal cause for suspicion that steps may be taken by the authorities. The cantonal authorities are given latitude for organizing this control so that it will not incommode those interested. As to pharmacies and commercial houses, control must be carried

out on the premises, because this does not merely concern the registers kept but also stocks, the storing of merchandise and labeling, all of which require personal inspection.

Article 23 of the federal council's decree states that a prescription (containing narcotics) can be filled only once. This obliges the patient to obtain a new prescription each time that the drug is to be taken again. The committee appointed to examine this question, however, expressed its opinion that a prescription might be refilled once or twice if a physician writes in full that this shall be done and signs the order. This will not require any change of the federal council's decree, as the matter merely concerns the pharmacist with the object of preventing him from refilling a prescription on his own authority, but it does not prevent the physician from authorizing over his signature and with his own responsibility such refilling. The committee also admitted that a prescription refilled twice (but not more) could not be considered abusive. The committee concluded that prescriptions written by physicians of other countries could be compounded only once. The pharmacist is to keep the original prescription but can give a copy of it, bearing his signature. This cannot be filled under any circumstances. Patients requiring the use of the prescription again must apply to a Swiss practitioner and obtain a prescription written by him.

NETHERLANDS

(From Our Regular Correspondent)

Dec. 29, 1926.

International Congress of Ophthalmology

In 1925, an Anglo-American committee was appointed, at the close of the London meeting, to make preparations for an international congress of ophthalmology. A preliminary meeting of the delegates of the various nations will be held at The Hague in July, 1927, to decide on the program of the session; this meeting will be under the auspices of the Nederlandsch Oogheelkundig Gezelschap.

Anniversary of the "Stovia"

The seventy-first anniversary of the School tot opleiding van indisch artsen (the Stovia, as it is commonly called) has just been held, on which occasion a memorial volume was published that gives the complete history of the school. It was founded in 1851 at Weltevreden through the initiative of an army physician. Its object was to train a native medical personnel, with a view to improving the organization of the health service of the country, and conferred on the graduates the special title of "doctor-djawa." The instruction was given in the Malay language. In 1875, reforms were introduced and the course was divided into two parts. There were two years of preparation and then a year of medical study. At this time, Dutch became the obligatory language. In 1870, the first policlinics for instruction were opened. A journal, the *Tijdschrift voor inlandsche Geneeskundigen*, was likewise established for the purpose of continuing the medical education of the native physicians after leaving school. At this time, also, the title of doctor-djawa was replaced by that of *inlandsch arts*, or native physician. His practice was likewise extended to include obstetrics. In 1913, clinical courses were organized and full-time professors were appointed, whereas heretofore instruction was given by army physicians. Finally, as announced in a previous letter, the school has acquired a complete medical faculty, and now bestows on its graduates the title of *"indisch arts,"* or Indian physician.

Women Physicians in the Netherlands

Madame Nuysink-Steinbuch presented at the meeting of the International Federation of University Women, held in Amsterdam, a communication on the status of women physicians in the Netherlands. There are at present 216 women physicians, 175 of whom are regular practitioners. Of the latter, forty-seven are general practitioners, twenty-five are pediatricians, twenty-one are functionaries of the state or of the commune (school physicians, health officers and the like), eleven are gynecologists, ten are psychiatrists and seven are ophthalmologists. Of the 216 women physicians, 102 are married, fifty-nine of them to physicians. The first medical diploma was granted to a woman in 1878. In the Dutch East Indies there are thirty-five women physicians, nineteen of whom are in the government service.

Special Nurses in Psychopathic Cases

Following a discussion that arose at a meeting of the Nederlandsche Vereeniging voor Armenzorg en Weldadigheid, Dr. Bierens de Haan prepared a study on the need for special nurses for the care of psychopathic patients. A psychiatrist cannot accomplish his work without proper aides, and these can be secured only by establishing special courses of instruction. Such instruction would be essentially practical, although theoretical courses in psychology and sociology ought also to be given. The course of instruction for such special nurses should cover from two to three years. A special diploma would be given those who complete the course, and recipients would be required to take an oath not to divulge professional secrets.

International Collaboration in Otorhinolaryngology

In order to secure international collaboration in certain specialties without the necessity of summoning large congresses, the Collegium oto-rhino-laryngologicum was recently founded at a meeting held at Groningen. The executive committee is composed of Drs. Zwaardemaker and Benjamins (Netherlands), Tweedy (England), Portman (France) and Voss (Germany).

Supervision of Ice Cream Manufacture

Systematic inspection at Amsterdam of the ice cream offered for sale has improved the hygienic conditions surrounding its manufacture and sale. During the summer of 1926, the inspectors visited 414 places at which ice cream was manufactured and in 114 instances further manufacture was prohibited. In eighty-nine cases, bacteriologic analysis of samples revealed an excessive number of bacteria.

Malaria at Walcheren

The researches of the Antimalaria League carried out on the island of Walcheren have resulted in a reduction of the number of persons infected with malaria from 217 in 1921 to ten in 1924. These results are attributed to the systematic destruction of mosquitoes, during the winter period, for the last three years. The destruction of mosquitoes was not undertaken in a general fashion. It was confined to the habitations of persons affected with malaria.

Twins in Relation to Backwardness in Children

Herderschee has been conducting an inquiry to determine whether mental weaknesses are not associated frequently with twin pregnancies. The inquiry covers 2,901 children who were found to require special instruction in schools for backward children. He discovered that 102, or 3 per cent, of the children were twins.

A Voyage to the Dutch Indies for Young Physicians

With a view to making young physicians just graduating from medical schools more familiar with the Dutch East Indies, the steamship companies have offered to engage these young physicians for the duration of a voyage from Amsterdam to Java or Borneo. This movement is the result of suggestions from various medical schools in the East Indies.

JAPAN

(From Our Regular Correspondent)

Jan. 18, 1927.

Pan-Pacific Medical Congress

Many Japanese medical men are planning to attend the First Pan-Pacific Medical Congress, to be held in Hawaii next year.

The Institute of Natural Sciences in Shanghai

A laboratory for research in natural sciences has been established at Shanghai by a joint undertaking of China and Japan. A committee from each of these countries met at Shanghai, Dec. 6-9, 1926. It was decided that all appointments of research scholars should be made by August, 1927; that the building should be located in the French concession in Shanghai, and that it should be completed in 1929. Studies which will be carried on at the institute will be concerned with Chinese medical science, local diseases of China, and biologic research on the subject of the shell-fish of the river Yangtze.

The International Conference on Hydrophobia

Japanese representatives at the International Antihydrophobia Conference to be held in England next April will be Dr. Kitajima, professor at the Keio University, and Dr. Ikeda, health officer of the home department.

Scarlet Fever in Tokyo

There was an increase of scarlet fever in Tokyo in 1926, as compared with 1925. The number of cases began to increase in November or December, and continued high until April or May. The greatest number of cases appeared in children between 6 and 10 years of age. The next most susceptible age was from 11 to 15 years, and the group below 5 years of age had the smallest number of cases. A few cases appeared in adults under 40 years of age, more in women than in men.

The Cause of Tsutsugamushi Disease

Dr. Keinosuke Miyairi, honorary professor in the Kyushu Imperial University, has recently published two reports on the causative agent of tsutsugamushi disease. He reports the discovery of a protozoon in the viscera of a field vole with an enlarged spleen, and he believes that this is the cause of the disease. Dr. Rinya Kawamura of the Niigata Medical College, who is also an investigator of tsutsugamushi disease, does not believe that this protozoon is the cause of the disorder, although he states that he also has seen the organism. Zealous study of this disease has been carried on for about twenty years.

A Native of Formosa Honored

Dr. Go Yoh, a native of Formosa, has recently been given the honor of Igakuhakushi, which is the highest distinction that can be destowed on a doctor of medicine. The honor is bestowed on one who has been instrumental in advancing scientific knowledge. Dr. Go Yoh is only 27 years of age, and has been engaged in investigations in pharmacology.

Death of Dr. Kenji Osawa

Dr. Kenji Osawa, professor emeritus at the Tokyo Imperial University, died of carcinoma, January 10, at the age of 76. When he was only 18 years of age he was appointed lecturer in the medical school founded by the Gokugawa Shogunate. In 1864 he was sent to Germany to study medicine as the first student to be sent abroad by the government. He was appointed professor in the University of Tokyo in 1877. Since this time the highest governmental honors have been bestowed on him.

Influenza

The number of epidemic influenza patients in Tokyo and its suburbs during the first half of January amounts to 370,605. One fifth of the number was made up of children under 5 years of age. Mortality in the epidemic has not been high except among babies under 2 years of age.

Training of School Physicians

A program of lectures for school physicians has been planned by the Tokyo school hygiene bureau. The first series of lectures will be given during the period from February 16 to March 9 of this year. The subjects of the various lectures are: (1) school hygiene; (2) ventilation of the school room; (3) physical examination of school children; (4) tuberculosis among children; (5) optical examination and myopia; (6) influence of auditory disturbances on speech; (7) congenital syphilis and dermatology; (8) physiology of physical training; (9) school hygiene laws, and (10) the life and development of the child. These lectures will all be given by professors of the Tokyo Imperial University.

School Lunches

Prior to the earthquake of 1923, the school lunch system was rarely seen in this country. However, as part of the relief work, consequent on the earthquake, free school lunches were given on a large scale. At present, some schools furnish lunch the year round, others only periodically. In Tokyo, certain primary schools supply lunch only to those who are delicate. In two municipal schools in which the students are boys from 14 to 18 years of age, lunch is prepared according to Dr. Saeki's menu. Rice is the principal article of this lunch, and a side dish of beef cutlet with potato is furnished. In the poor quarters, special school meals are served three times a day.

BERLIN

(From Our Regular Correspondent)

Feb. 26, 1927.

Researches on the Action of Iodine on Heart and Arteries

The effect of iodine therapy in arteriosclerosis is notoriously uncertain. Whereas iodine is a sure aid in vascular changes of syphilitic origin, many eminent clinicians contend that it has no effect in the sclerosis of old age. According to the results of an inquiry instituted some time ago by Dr. J. Schwalbe, editor of the *Deutsche medizinische Wochenschrift*, among the directors of German university clinics, very few of them have observed good effects from iodine treatment in arteriosclerosis of old age. The experiment recently reported to the Berliner Medizinische Gesellschaft by Professor Guggenheimer, assistant at the Berliner Medizinische Klinik of Professor Goldschneider, are, therefore, all the more significant. The experimental tests were performed by passing a current through an isolated mammal heart. In a strong concentration, sodium iodide and potassium iodide caused only a reduction of heart energy. In dilute solutions they effected also a dilatation of the coronary vessels and increased heart frequency. The optimal effect was produced with a dilution of 1:5,000,000, whereas dilutions under 1:10,000,000 were without effect. The same range of action was manifested by organic preparations of iodine. The remaining agents that extend the coronary vessels, such as the nitrites and the purine bodies (formerly examined), behave just the opposite. On the peripheral vessels of the cat a similar effect was produced by the intravenous administration of from 0.15 to 0.50 mg. of sodium iodide. A prompt lowering of the blood pressure was effected. The dilatation of the vessels is noted when the iodine content of

the human blood has been increased two or more fold. This effect can probably be produced with smaller quantities of iodine than have been heretofore employed, as appears evident from its application in anginose conditions and in certain cases of high blood pressure. According to the recent researches, the vasodilative effect of iodine can be achieved with less than the small doses heretofore administered. It will be interesting to observe whether clinical experience will confirm the results of Guggenheimer.

The Increase of Pernicious Anemia

At the suggestion of Professor Magnus-Levy, specialist in diabetes, the Berliner Medizinische Gesellschaft instituted an inquiry on the increase of pernicious anemia. Prof. V. Schilling, hematologist and chief physician at the I. Medizinische Universitätsklinik der Charité, undertook the conduct of the investigation, on the basis of a questionnaire prepared by a committee headed by F. Kraus. At the session of the Medizinische Gesellschaft held, January 26, he reported the results of his research. The material utilized consisted of some 2,800 cases. From the general curve and from the comparative statistics of Berlin clinics and other clinics of Germany; likewise from the curves for men and women separately, and from the admissions and the department reports of hospitals, it appears that there has been an increase of the disease for the decade 1915-1924 amounting to from three to four fold as against the prewar figures. It seems evident that the manifold injuries of the war and the postwar periods in all regions and among all classes of the population were a contributory factor. Recognition of the effects of external conditions is important in a special study of the general aspects of the disease, while a more accurate knowledge of the injuries will aid prophylaxis. It would be advisable to assemble patients with pernicious anemia in special sanatoriums in order that the unsettled questions in regard to the origin and treatment of the disease might be studied on large groups.

Interchange of European and Japanese Scientists

According to information given out by the health section of the League of Nations, four Japanese medical men will be sent next year to Europe for a stay of nine months. Their specialties are prophylaxis of infectious diseases, the science of nutrition, diseases of the reproductive organs, and insurance legislation. Four medical men will likewise be sent from Europe to Japan for nine months, and will be admitted to the Imperial Japanese Institute for Infectious Diseases, the Kitasato Institute, and the Hygienic Institute and the Institute for the Science of Nutrition, at the University of Tokyo.

A New Social Hygiene Welfare Movement

The Prussian ministry of the interior is planning to establish a system of social hygiene for the benefit of the federal police. The initial step will be the creation in Berlin at the police hospital (das Polizeikrankenhaus) of a special bureau for welfare work among the police force. The work will include the organization, in districts, of consultation centers on nutrition, dwelling hygiene, clothing, marriage, tuberculosis and other similar interests.

Health Services Promoted by Life Insurance Companies

Five of the largest life insurance companies have formed a German central bureau for the promotion of health service for policyholders. The main purpose of the service is to spread a knowledge of the value of prophylactic health measures among the insured and thus among industrial workers in general. Periodic health examinations among the insured will likewise be instituted.

Marriages

SIEGFRIED BERNARD BIEKER, St. Petersburg, Fla., to DR. ANNETTE MEBANE of Memphis, February 16.

CHARLES D. CROPSEY to Miss Edith MacCready, both of Rutherford, January 21, at New York.

JUSTICE F. WYNN to Miss Marie Harris, both of Evansville, Ind., February 20, at St. Louis.

JOHN W. WALLACE, Covington, Va., to Miss Irma Temple Robinson of Richmond, February 9.

RAYMOND S. SHURTLEFF, Chicago, to Miss Mildred Pomeroy of Abingdon, Ill., February 20.

Deaths

William B. Davis ⊕ Colonel, U. S. Army, retired, Baltimore; University of Virginia Department of Medicine, Charlotteville, 1870; was commissioned assistant surgeon, U. S. Navy, in 1871, and assistant surgeon, U. S. Army, in 1877; appointed deputy surgeon general in 1905; at various times chief surgeon of the Department of the Lakes, Department of the East, Department of the Missouri and Department of Luzon, P. I.; retired for age, 1912; died, Nov. 30, 1926, of cerebral hemorrhage, aged 78.

William Joseph Meyer, New York; Bellevue Hospital Medical College, New York, 1895; formerly instructor and lecturer in surgery, Fordham University School of Medicine; medical director and superintendent of a hospital bearing his name, at White Plains; for fifteen years physician to the Westchester County Jail; aged 52; died, March 8, at the Bellevue Hospital, of pneumonia.

Charles W. Saalfrank, Philadelphia; Jefferson Medical College of Philadelphia, 1886; member of the Medical Society of the State of Pennsylvania; for thirty-five years on the staff of the Philadelphia Protestant Home for Aged, and for twenty-five years on the staff of the German Baptist Home for Aged; died, March 5, of carcinoma of the pancreas, aged 65.

Amos Wilson Abbott ⊕ Minneapolis; Medical Department of Columbia College, New York, 1869; emeritus professor of gynecology, University of Minnesota Medical School, Minneapolis; member of the Western Surgical Association; founder and chief of staff of the Abbott Hospital; aged 83; died, February 27, of heart disease.

Alfred J. Ogram, Jacksonville, Ill.; Western Reserve University School of Medicine, Cleveland, 1883; member of the Illinois State Medical Society; past president and secretary of the Morgan County Medical Society; on the staff of the Passavant Memorial Hospital; aged 68; died, Dec. 11, 1926.

William A. Edwards ⊕ Maywood, Ill.; Milwaukee Medical College, 1908; member of the State Medical Society of Wisconsin and the American Academy of Ophthalmology and Oto-Laryngology; aged 62; died, February 25, at the U. S. Veterans' Hospital Edward Hines, Jr., of tuberculosis.

Otto Walcott Simpson ⊕ Peoria, Ill.; Chicago College of Medicine and Surgery, 1908; past president of the Peoria County Medical Society; served during the World War; on the staff of St. Francis Hospital; aged 50; died, February 22, at San Diego, Calif., of heart disease.

Harrison Hedges Noble, Cleveland; Western Reserve University School of Medicine, Cleveland, 1886; for many years member and for four years president of the board of education; aged 66; died, February 28, at St. Luke's Hospital ,of arteriosclerosis.

Ai Stillman Annis, Rochester, N. H.; Hahnemann Medical College and Hospital, Chicago, 1895; member of the Associated Anesthetists of the United States and Canada; aged 70; died, February 23, at Milton, of chronic nephritis.

Gaillard F. Seems, Mitchellville, Iowa; Hahnemann Medical College and Hospital, Chicago, 1898; aged 51; died, February 5, at the Lutheran Hospital, Des Moines, of acute hemorrhagic and suppurative pancreatitis.

Frederick W. Reynolds ⊕ San Pedro, Calif.; University of Southern California College of Medicine, Los Angeles, 1900; on the staff of the San Pedro General Hospital, where he died, January 26, of cerebral hemorrhage, aged 53.

Myron Fred Cutler ⊕ Webster, Mass.; Tufts College Medical School, Boston, 1912; aged 47; died in February, at Worcester, of injuries received when the automobile in which he was driving was struck by a train.

Henry Williams Howard ⊕ Los Angeles; Rush Medical College, Chicago, 1890; superintendent of the Presbyterian Hospital, Chicago, 1903-1906; on the staff of the Angelus Hospital; aged 60; died, February 23.

Thomas Edward Jefferson, Danville, Ohio; Western Reserve University School of Medicine, Cleveland, 1883; member of the Ohio State Medical Association; aged 70; died, February 26, of heart disease.

Theodore Wild, Chicago; Rush Medical College, Chicago, 1865; member of the Illinois State Medical Association; Civil War veteran; aged 92; died, Dec. 13, 1926, at the Alexian Brothers Hospital, of hernia.

Robert Oliver Blacklock, Detroit; College of Physicians and Surgeons, Baltimore, 1907; served during the World War; aged 44; died, February 19, at the Walter Reed General Hospital, Washington, D. C.

Jefferson D. Smythe, Greenville, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1888; member of the Mississippi State Medical Association; aged 65; died, Dec. 31, 1926.

Charles Alexander Gundy ⊕ Lewisburg, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1896; secretary and past president of the Union County Medical Society; aged 54; died, February 20.

Jesse James Tilton, Centralia, Wash.; Hospital College of Medicine, Louisville, 1907; member of the Washington State Medical Association; aged 44; died, February 15, of pneumonia following influenza.

James Porter Mills, New York; Hahnemann Medical College and Hospital, Chicago, 1873; Hahnemann Medical College of Philadelphia, 1874; aged 79; died recently, at London, England, of carcinoma.

Shadrack Raughley, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1892; on the staff of the Frankford Hospital, where he died, March 8, aged 56, of cerebral hemorrhage.

Frederick Eugene Harrison ⊕ Fordyce, Ark.; Kentucky School of Medicine, Louisville, 1894; served during the World War; member of the school board; aged 55; died, February 17, of pneumonia.

Henry Graham MacAdam, New York; Columbia University College of Physicians and Surgeons, New York, 1895; aged 53; died, March 5, of intestinal obstruction, due to diverticulitis.

Moses B. Kincheloe ⊕ Joplin, Mo.; University of Louisville (Ky.) School of Medicine, 1874; College of Physicians and Surgeons, Chicago, 1887; aged 81; died, Dec. 31, 1926, at Kansas City.

Robert Benton Hudson, Alamo, Texas; Barnes Medical College, St. Louis, 1901; member of the State Medical Association of Texas; aged 49; was shot and killed by his wife, February 17.

George Henry Flatz, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1924; aged 27; died, March 10, at the Pennsylvania Hospital, of streptococcic septicemia.

William Clyde Oates, Belmont, N. C.; North Carolina Medical College, Charlotte, 1919; member of the Medical Society of the State of North Carolina; aged 36; died, in February.

Robert L. Wiseman, Pine City, Minn.; University of Minnesota Medical School, Minneapolis, 1897; member of the Minnesota State Medical Association; aged 52; died, in January.

John Thornton Bullard, New Bedford, Mass.; Medical School of Harvard University, Boston, 1887; member of the board of health; aged 62; died, February 23, of pneumonia.

William Henry Wallace, Wayne, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1864; Civil War veteran; aged 82; died, March 1, of carcinoma of the throat.

Maurice Rosenberg, New York; Medical Department of Columbia College, 1899; aged 54; died, February 23, at the Long Island College Hospital, Brooklyn, of diabetes mellitus.

Medill M. Dix, Prospect, Ohio; Kentucky School of Medicine, Louisville, 1894; member of the Ohio State Medical Association; aged 71; died, February 25, of heart disease.

Florince O. Donohue ⊕ Syracuse, N. Y.; Long Island College Hospital, Brooklyn, 1877; past president of the New York State Board of Health; aged 76; died, February 19.

Clarence E. Kretz, Brooklyn; Long Island College Hospital, Brooklyn, 1914; member of the Medical Society of the State of New York; aged 40; died recently, of pneumonia.

Philander S. Cole, Baxter, Tenn. (licensed, Tennessee, 1889); for more than thirty years justice of the peace; aged 72; died, Dec. 24, 1926, of carcinoma of the stomach.

Noel Ernest Lake, Kansas City, Mo.; University Medical College of Kansas City, 1904; member of the Missouri State Medical Association; aged 50; died, February 16.

William Paxton Darroch, Cayuga, Ind.; Kentucky School of Medicine, Louisville, 1877; member of the Indiana State Medical Association; aged 70; died, February 2.

Walter Magruder Leonard ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1917; served during the World War; aged 35; died, February 22.

Samuel B. Cary, Cairo, Ill.; University of Nashville Medical Department, 1881; member of the Illinois State Medical Association; aged 76; died, February 24.

Henry Travers Cole, La Grange, Ill.; Hahnemann Medical College and Hospital, Chicago, 1894; aged 56; died, February 14, following a cerebral hemorrhage.

Lawrence C. Gray, Clarksville, Ark.; College of Physicians and Surgeons, Memphis, 1909; member of the Arkansas Medical Society; aged 41; died, January 21.

William Enos Barnes, Charleston, Ill.; American Medical College, St. Louis, 1903; aged 58; was accidentally shot and killed, February 22, at Groveland, Fla.

Lewis Walker Schnatterly, Freeport, Pa.; Western Reserve University School of Medicine, Cleveland, 1883; aged 81; died recently, at Coronado Beach, Fla.

James Henry Haile, Sacramento, Calif.; Bellevue Hospital Medical College, New York, 1893; aged 69; died, November 17, of a self-inflicted bullet wound.

William Clark Huntington, Howell, Mich.; University of Michigan Medical School, Ann Arbor, 1872; aged 76; died, January 22, following a long illness.

Henry B. B. Montgomery, Los Angeles; Medical College of Ohio, Cincinnati, 1881; aged 69; died, Nov. 27, 1926, at the Los Angeles General Hospital.

May Rogers Owen, Brooklyn; Woman's Medical College of Baltimore, 1883; aged 85; died, February 25, at Jacksonville, Fla., of heart disease.

Christopher J. Hillis ⊕ Kingston, N. Y.; Medical Department of Columbia College, New York, 1890; aged 60; died, March 4, of acute nephritis.

James Edmund Calhoun ⊕ Dubuque, Iowa; Atlanta College of Physicians and Surgeons, 1912; aged 40; died, February 20, at Atlanta, of endocarditis.

William T. Lampton ⊕ Milroy, Ind.; University of Louisville School of Medicine, 1880; aged 71; died, March 3, at a sanatorium in Martinsville.

William Petry Earl ⊕ Little Falls, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1898; aged 52; died recently.

Aloysius J. Kanne ⊕ Peoria, Ill.; St. Louis Medical College, 1886; aged 62; died, February 26, at the Proctor Hospital, of heart disease.

John A. Jeffrey, Riceville, Iowa; College of Physicians and Surgeons, Keokuk, 1881; aged 85; died in February, of influenza.

Charles F. Smith, Trenton, N. J.; New York Homeopathic Medical College, 1884; aged 70; died, January 24, of angina pectoris.

Louis J. Maywit ⊕ Chicago; Rush Medical College, Chicago, 1895; aged 64; died, March 5, of carcinoma of the colon.

William Gray, Clarendon, Texas; St. Louis College of Physicians and Surgeons, 1890; aged 66; died, February 18.

King E. O'Neal, Providence, Ky.; Meharry Medical College, Nashville, 1917; aged 38; died, February 14, of pneumonia.

John T. Atterbury, Estill, Miss.; Missouri Medical College, St. Louis, 1870; aged 79; died, February 17, of uremia.

Charles Stuart Welles, London, England; Dartmouth Medcal College, 1906; aged 55; died, January 19.

R. J. Bruce, Hamilton, Ga.; Atlanta Medical College, 1880; aged 78; died recently, of heart disease.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

TUBERCO

Another Piece of Consumption Cure Quackery

"Tuberco," described by its exploiters as "the only guaranteed treatment for all forms of lung trouble," is sold by the Tuberco Laboratories of Atlanta, Georgia. Presumably, Tuberco Laboratories is a name, as the composition of Tuberco obviously does not require a laboratory for its manufacture. According to the quacks that sell Tuberco, "the chemist has long known that locked within the bosom of the pine is the cure of many diseases, among them tuberculosis." Of course, neither the chemist nor any one else has known any such thing, but one cannot expect truthfulness from those who hold human life so lightly as to gamble with it. Further,

TUBERCO

The Only Guaranteed Treatment for All Forms of Lung Trouble

If you have a persistent hacking cough. If you spit up mucous when you cough. If you are losing weight. These are some of the danger signals that you should watch. Any of these signs may indicate that you have some form of that dread enemy of modern mankind—CONSUMPTION.

Don't delay—remember that delays are dangerous. If you have any of the above symptoms, or any other symptoms that you think dangerous, start today taking TUBERCO, the only guaranteed treatment for all forms of lung trouble.

TUBERCO CONTAINS NO OPIATES
IS HARMLESS TO THE SYSTEM
CONTAINS NO MINERALS

GUARANTEE—We guarantee TUBERCO to be of benefit in any case of lung trouble of any form and in any stage, and we are ready to refund the full purchase price to any one who has taken a Three month's treatment where evidence is shown that there has been no benefit derived from the treatment.

TUBERCO is marketed only in capsule form, and each box contains a full Thirty Day treatment.

according to the thesis developed by the Tuberco concern, the scientific world has been led to search the pine for its alleged illusive property, but until the discovery of Tuberco these efforts had proved fruitless. Then:

"After painstaking effort and years of experiment our chemists have succeeded in incorporating these principles from the pine in their virgin state. Prior to our discovery all previous efforts depended upon the distillation of gum turpentine, which resulted in the partial destruction of these highly volatile and oxygenated principles. In presenting Tuberco to the sufferer from tuberculosis, we feel that we have succeeded in incorporating in convenient form all the valuable resinous principles of the pine deemed so vital in the destruction of the Tubercle Bacilli and the arrest of the disease itself."

"And like Nature Tuberco does not work wonders over-night, but also like Nature its hold is certain and once it takes hold the improvement is regular until all trace of the disease is wiped out."

Realizing the menace of the fake consumption cure, the Tuberculosis Association of Atlanta, Georgia, appointed a committee to take some action on this nostrum looking to the education of the public, tuberculous or otherwise. The Tuberco concern has, it seems, been operating in Atlanta for some months and, as is usually the case, had been given publicity, presumably at advertising rates, by such newspapers as are more concerned with the amount of money they can get than with the methods by which they get it. It is unthinkable that any publisher with brains enough to get out a metropolitan newspaper can be so ignorant as to believe that Tuberco will cure consumption.

One of the first moves on the part of the Tuberculosis Association of Atlanta was to invoke the aid of the Bureau of Investigation of the American Medical Association, and a sealed original package of Tuberco, which sells at the outrageous price of $10, was sent with the request that an analysis be made of this nostrum. The specimen was turned over to the American Medical Association's Chemical Laboratory. The Laboratory's report follows:

LABORATORY REPORT

"One original package of 'Tuberco,' Tuberco Co., Atlanta, Ga., was submitted to the A. M. A. Chemical Laboratory for examination. The package contained 120 capsules containing a reddish brown, semiplastic mass, possessing an odor suggestive of turpentine, coated with a reddish brown powder resembling cinnamon in taste; the weight of their contents varied 20 per cent, i. e., from 0.560 Gm. (approximately 8.6 grains) to 0.715 Gm. (approximately 11.0 grains), the average weight of the content of 25 capsules was 0.619 Gm. (approximately 9.5 grains).

"The following declaration appeared on the trade package:

TUBERCO. Trade Mark applied for. For the Treatment of TUBERCULOSIS. Contains no Alcohol, Acids or Narcotics.

"Microscopic examination indicated the presence of gum turpentine and powdered cinnamon. Alkaloids, starch, iodides, heavy metals, chlorides and sulphates were not found. A specimen ignited at 900 C. for two hours yielded 0.11 per cent ash. The product, therefore, appears to be essentially gum turpentine, coated with powdered cinnamon and placed in capsules."

Here, then, is the latest cure for consumption: Gum turpentine—less than 3 ounces—sold for $10.

While most of the false and fraudulent claims made for this product are on circulars that, presumably, are not part and parcel of the trade package and, therefore, not directly amenable to the National Food and Drugs Act, the name of the preparation itself, as well as the directions for taking it, make plain that this nostrum is sold as a treatment for tuberculosis. As such, the preparation would seem very definitely to violate the Food and Drugs Act, and, doubtless, in due course, the federal authorities will get around to this piece of quackery.

Correspondence

WHEN CANCER BECOMES A MICROSCOPIC DISEASE, THERE MUST BE TISSUE DIAGNOSIS IN THE OPERATING ROOM

To the Editor:—Through THE JOURNAL I am anxious to call the attention of members of the medical profession interested in tissue diagnosis in the operating room to an article on "Biopsy" published in the *Southern Medical Journal* (**20**: 18 [Jan.] 1927).

As we have enlightened the public and as the public has come to understand our message, the percentage of inoperable and hopeless cancer has fallen: in the records of the Johns Hopkins Hospital from more than 50 per cent previous to 1900 to less than 5 per cent since 1920. Cancer can be diagnosed clinically in the hopeless and late stages. In the next stage of cancer, which usually is not hopeless and is often clinically benign, the diagnosis can be made by an experienced surgeon with the naked eye. This is the gross diagnosis of cancer.

But in some communities the people have reacted so intelligently to the message of the medical profession that they are coming to the operating room in the stage of the local disease which cannot be recognized clinically, roentgenographically or grossly. Cancer, or the condition that precedes cancer, is here seen in the microscopic stage. Therefore,

in some instances, when the operation for the malignant disease must be greater in extent than for the benign, there must be a microscopic study, and therefore a biopsy. Unless this microscopic examination is made then and there in the operating room, there must be a delay of hours or days between the excision of the piece, or the excision of the local growth before the complete radical operation, should the microscope reveal cancer.

In tumors of the breast, the necessity of a microscopic examination at the time the lump is explored or removed is becoming more and more common throughout this country. It seems to be a dangerous thing to operate for cancer of the breast in two stages; so much so that I would advise the complete operation in case of doubt in those operating rooms not prepared for the frozen-section examination. Diseases of bone are being roentgenographed in such an early stage that the number of cases in which it is impossible to distinguish the benign from the malignant is increasing so rapidly that biopsy for microscopic diagnosis is making the problem of the correct treatment of bone lesions a difficult one. In many operating rooms in hospitals in this country there is no provision for frozen sections. In many others, the pathologist is inadequately trained. It is a difficult task to distinguish between some benign and malignant breast lesions, and perhaps even more difficult in the benign and malignant lesions of bone. It seems unnecessary for those of us interested in better hospitals, which must include better diagnosis in the operating room, to allow ourselves to drift. There is an opportunity for an organized effort. Those interested in tissue diagnosis in the operating room may come to the Surgical Pathological Laboratory of the Johns Hopkins Hospital on the Saturday at the end of the annual session of the American Medical Association in Washington. I trust that those interested enough to come will write me a letter and, in addition, give me their views.

JOSEPH COLT BLOODGOOD, M.D., Baltimore.
904 North Charles Street.

COLON FILLING STATIONS*

To the Editor:—History repeats itself. For years the spas in England and on the continent of Europe had bath attendants whose main work was to lavage the colons of persons who believed that they had colitis. Waters of mysterious virtues from salt to brimstone were introduced below to wash out above, and nobody in this country knew or cared much about it. Combe (L'autointoxication, page 513), a physician of some fame in his day as a serious student of biologic disorders, wrote distinctly about it and presented all that the most conspicuous exponents of this method of treatment have done, are doing today or can do in the future. Years ago he pointed out that by it we were able to wash out the supposedly inimicable proteolytic organisms occurring only in the large intestine; that it was possible to wash out as far as the cecum and to remove the irritating mucus (which is really a protective substance), and he advised the use of different solutions to accomplish different purposes. When things had become so bad by the popular use of the method, Matthew (Pathologie-intestinale) brought out that lavage of the intestine had been much abused and its indiscriminate application had led to its use in cases in which there was not a valid indication for its employment, either from the evidence of autointoxication or from the amount of mucus. Fifteen years ago there were so many colon washers in England and on the continent of Europe that the style has run out today with the profession, the laity being only mildly interested and far more intelligent about it. As far back as that time, the controversy raged between the high and low enema with far more intelligence than exists today. There were many who advocated the long tube, and many others who wrote wisely and completely on the ease with which the colon could be flushed with a short tube (by enema).

The profession and laity in our country, quite ignorant of all that Britain and Europe had gone through in this treatment, were fertile soil mentally for the recent "great discovery" of this beneficial procedure. A nonmedical "discoverer" of this time-worn method rose among us, and many of the profession as well as laity fell for it, dorsal, right side, and some on their knees. The controversy is again going strong as to whether an enema can or cannot clean a colon as well as a colonic irrigation (long tube), and whether a long tube can or cannot be passed to the cecum or right colon. The number of filling stations has increased throughout New York City until today they are almost as numerous, and the signs on some of them are distinctly more conspicuous, than gasoline stations.

Any roentgenologist will prove with a barium clysma that fluid introduced into the rectum will outline all of the colon and the cecum in a few minutes' time, and all that any of us do to accomplish this (who use the roentgen ray for diagnostic purposes) is to use the small hard rubber tip of a fountain syringe and a fountain bag, held up a foot or two above the patient's abdomen to deliver the fluid. Since complete filling and logical emptying is accomplished in such a simple way, the fallacy of intubating colons (a procedure by no means danger free) must be evidence enough to answer this part of the controversy. Plainly, the colon fills itself, and if one has only a simple knowledge of its peristaltic action, passing tubes two feet or longer in its lumen and irrigating often defeat the best effects accomplishable by irrigation.

In 1907, Combe (whose writing is slightly condensed from the French) presented the following directions for the passing of the long tube:

> I use a long tube from 5 to 8 mm. in diameter, 50 cm. long for children and 1 meter long for adults. This tube is connected with a douche-can holding 2 quarts, placed at most 10 cm. above the buttocks of the patient, who is lying on his right side with his knees drawn up and his buttocks raised. The tap having been opened, one introduces the tube 1 or 2 cm. within the rectum. The water flows and opens the intestine in front of the tube. It is then easy in a minute to push the tube on a couple of centimeters. Waiting on each occasion until the water opens a way for it, one manages easily to introduce the whole of the tube and the water as far as the cecum without the patient feeling the least pain.

History has repeated itself, and all this laudation of the main proponent of the same method here is like taking the crown from a dead man and acclaiming another as the real king.

Colon irrigation per se is practically a worthless procedure unless it is combined with other therapeutic measures. There are a few indications for colon irrigations for a short time, but in routine work there are far more occasions in which they are contraindicated and still more in which they are useless. The questions on these should not be determined by perfunctory assumption, or left to the judgment of the nonmedical irrigator who is not qualified nor legally permitted to judge. As a rule, the patient does not know and most often could not properly understand the significance of the returns from the bowels. The common practice of instilling organisms (*Bacillus acidophilus*) into the colon has been proved to be a useless procedure and is the P. T. Barnum of the method. On the other hand, colon irrigation is of value as a therapeutic adjunct at times, and combined with other measures it may be worth while. At times it is a diagnostic measure of some value, and again it has a psychologic value worthy of application in a suitable instance.

In 1926, forty-seven patients came to me who had been treated by colon irrigators who were not physicians, most of them proprietors at typical filling stations. The number taking bacillus acidophilus milk by mouth is decreasing and

* This apt term first appeared in THE JOURNAL, Aug. 28, 1926.

the number of irrigated is increasing. The average number of irrigations given in these cases was sixteen. At 5 gallons a treatment, 4,330 gallons of water was wasted in a season when the water supply was short in the state. Among these were some of the worst colon wrecks I have ever seen: persons with tremendous dilatation of the entire colon, whose bowels could not be moved by drastic purgatives by mouth and who before accomplished fair results by simple laxatives, in the marked states of anemia and general debility that come from the treatment; persons whose colons had been so ironed out by forcible distentions that any semblance of haustral contractions was no longer demonstrable, and quite a few that were as dependent on the procedure for bowel elimination as the cocaine habitué is on a drug. Some of the irrigators who were not physicians, in addition to the washings, made examinations of the feces and urine, and prescribed diets, general attention and medication by mouth and rectum; in several instances, hypodermic injections were given as well. One might ask whether the Practice of Medicine Act now in force in this state may still be violated here. Surely it seems logical that any medical man who desires colonic irrigations for his patient should have it done by a nurse, one who is not fitted up in an establishment for the purpose, or if so, one who does no prescribing or giving of advice in what properly is the practice of medicine.

In the forty-seven cases referred to were two cases of carcinoma of the colon; five cases of pulmonary tuberculosis with ulceration in the ileocecal region; eight infected types of ulcerated colitis; two cases of pernicious anemia; six instances of cardiovascular renal disease and one case of Paget's disease; in all, twenty-four instances of persons who had gone to these stations and were treated without diagnosis. Of the twenty-three remaining, none had a condition which required colonic irrigation. At $5 a washing, $4,165 was paid out for treatment which was not required.

ANTHONY BASSLER, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FRUIT ACIDS IN ACIDOTIC CONDITIONS

To the Editor:—The following conclusions were published in *California and Western Medicine:* "The fruit acids (citric, tartaric, malic, etc.) are oxidized to carbonic acid, which combines with any available alkali; and, therefore, the net result must be a deprivation of the alkali reserve of the body proper. This loss is accounted for partly by the presence of some excreted sodium bicarbonate (from the oxidized acids), and partly by the increased phosphates in the urine, a part of the CO_2 escaping by way of the lungs. The presence of these salts in the urine gives this excretion an alkaline reaction. The net result for the body proper can only be a tendency to acidosis. Therefore, the fruit acids are contraindicated in acidotic conditions." Are these views correct?

E. F. HOOVER, M.D., San Diego, Calif.

ANSWER.—The statements that fruit acids are contraindicated in acidosis because they tend to cause acidosis are not supported by sound scientific observations. The statements, as made, admit that the fruit acids are burned in the body to carbon dioxide. This means that these fruit acids are burned to the normal end-products of the combustion of the greater majority of the carbon compounds. This is a well established fact, and there is no reason to believe that the carbon dioxide thus formed is disposed of in any other way than that formed in the burning of fats, carbohydrates and proteins; that is, excreted through the lungs. The normal buffer action of the blood and tissues will take care of this carbon dioxide just as well as other carbon dioxide, and therefore will not remove reserve base from the system. Fruits and fruit juices are effective therapeutic agents against certain types of acidosis. The main reason for the efficient action of these fruit juices is the fact that the fruit contains not only free "fruit acids" but also alkali salts of them. These alkali salts apparently are absorbed, the organic acid radical is utilized and oxidized to carbon dioxide, and therefore the base, usually potassium or sodium, is available in the blood and tissues to neutralize or buffer whatever acids may be formed. It has recently been suggested that certain fruit acids may actually stimulate the body tissues to burn certain of the more complex and more difficultly oxidizable organic acids which, if not burned, would actually tend to cause a condition of acidosis because these difficultly oxidizable organic acids, like inorganic acids, would have to be disposed of through the kidneys as the alkali salts.

GRAPEFRUIT JUICE AS A REMEDY

To the Editor:—In view of the chemical components of grapefruit juice and the reaction with sodium bicarbonate, how much or how little credence should be given to statements attributing to this combination remedial effects in influenza? What would be considered the physiologic and therapeutic action in this instance? Please omit my name.

M.D., South Carolina.

ANSWER.—Grapefruit juice has diuretic qualities, which are usually credited to the vegetable acids present. As these organic acids are oxidized in the body, they do not acidify the system. When sodium bicarbonate is added, it exerts an alkalizing tendency. Of course, nothing specific or directly curative could be expected from this remedy.

DECAY OF DECIDUOUS TEETH

To the Editor:—I was consulted the other day by a woman who has two children with badly decayed deciduous teeth, decay beginning a short time after eruption. It seems that this is a family characteristic on the father's side of the house, only one of his father's children having had good teeth, and this one was bottle fed. The mother fears that her children's permanent teeth will fare as badly; hence, she consulted me. Any information you can give me will be appreciated, especially along the therapeutic line. Would parathyroid extract be of any assistance? Please omit my name.

M.D., Minnesota.

ANSWER.—It is unusual to find imperfectly formed deciduous teeth. Excessive decay is due to extreme susceptibility, as a result of environmental conditions not well understood, but most likely to be found in the saliva. The point is that the decay is most likely not due to defective structure of the baby teeth. The permanent teeth are likely to be well formed, except as some serious illness or period of malnutrition during the time of their formation, particularly from birth to the fifth year, might affect them.

The susceptibility of the teeth of such children to decay usually continues for a number of years after the permanent teeth erupt, and unusual care must be taken in the matter of brushing and frequent visits to the dentist. The greatest danger in such cases is that the child will lose the habit of vigorous chewing because of the bad condition of the deciduous teeth. As a rule, young children have good chewing power and use it. They can bite with a force of from 125 or 150 pounds on the baby molars. This vigorous use of the teeth is the greatest cleanser and preventive against decay, as applied to both the deciduous and the permanent set. If the young child forms the habit of swallowing most of its food without proper chewing, because it cannot chew vigorously with badly decayed teeth, it is likely to continue this habit when the permanent teeth come in, and consequently they are more likely to decay.

In such cases it is most important that the baby teeth be kept in the best possible condition by the dentist, and that the child's food be such as to require heavy chewing, as many soft items as possible being omitted.

EFFECTS OF EMETINE—REPRODUCTION IN TWINS

To the Editor:—1. What is the action of emetine on the muscular system in the doses given in the treatment of amebiasis? If a sufficient dose is given to cause a neuritis, what effect is there on the heart muscle? In toxic doses does it cause a degeneration of the heart muscle, or, after elimination of the drug from the system, do the muscle fibers return to normal? 2. In Bulletin 905 of the United States Department of Agriculture, page 29, there is a discussion of the freemartin. Does a similar condition obtain as to reproduction in the female of different sexed twins in the human family? Kindly omit name.

M.D., California.

ANSWER.—1. Emetine has only a slight action on striated muscle, and a still feebler effect on motor nerves. It has a tendency to relax certain involuntary muscles, such as the bronchial musculature or the uterus. Though it increases the

activity of the muscles of the gastro-intestinal tract, as is evidenced by vomiting and purging, these effects are partly reflex and partly centric; and it is probable that the direct effect on the muscles themselves is relaxing. It lowers blood pressure by depressing the heart muscle and lessening the tone of the blood vessels.

There can be little doubt that emetine has a cumulative tendency; and that, if administered continuously, it depresses the heart. As has been shown by necropsy, it is capable of causing degeneration of the heart muscle. That this muscle can return to normal is evidenced by the fact that the signs of cardiac depression improve quickly when the drug is omitted.

In view of these facts, the usual dose of from 0.03 to 0.04 Gm. daily should be discontinued as soon as 0.3 Gm. has been given, or definite increase of pulse rate occurs. While the patient is under emetine treatment he should remain in bed, and an accurate record of the pulse rate kept. After the emetine has been discontinued, the patient should be allowed to get out of bed very gradually, and should return to bed if the pulse rate becomes considerably increased. A second course of emetine should not be given until after an interval of at least seven days, and the total dose of the second course should not exceed 0.2 Gm. Besides this, increased pulse rate, general lassitude, intensified diarrhea, lessened reflex activity and possibly neuritis should be sufficient warning to prevent serious results. The real danger lies in the too long continued use of therapeutic doses: an entirely unnecessary procedure in the treatment of amebiasis, as the active endamebas will generally be destroyed by the dosage indicated, and the encysted forms will not be affected by further continuance of the dose.

2. This condition so far is known only for the two-sexed twins in cattle. It depends on an early embryonic anastomosis between the placental blood vessels of the twins. The sex hormones of the male thus reach the female embryo and transpose it more or less with reference to its reproductive system in such a way that the female (exceptions may occur from failure of anastomosis of the placental vessels) becomes sterile. The male, on the other hand, is unaffected.

In certain agricultural communities there appears to have been a belief that a similar condition obtains as to reproduction in the female of different sexed twins in human beings, but an extensive examination made by various authorities has established that this is not the case. There is no reason to anticipate any reproductive disturbances arising from the association of twins of different sexes in utero in human beings.

AMIDOPYRINE TEST FOR OCCULT BLOOD

To the Editor:—Please publish the technic and give the formula for using the amidopyrine test for occult blood. How is this regarded as a test?

F. M. MANSON, M.D., Worthington, Minn.

ANSWER.—The discovery of occult blood by chemical means frequently is an important procedure that has exercised the ingenuity of laboratory men for years. The guaiacum and the benzidine tests have been in common use; the amidopyrine ("Pyramidon") test, which was discovered by Thevenon and Roland, is a modification of the benzidine test. It is stated to be very delicate.

According to the *British Medical Journal*, June 10, 1922 (Epitome, p. 92), A. Fortwaengler (*Zentralbl. f. inn. Med.* May 13, 1922) confirms the reports of other authors concerning amidopyrine, which has proved to be a very delicate test for the presence of occult blood. The solutions required for the test are:

1. Amidopyrine 5, alcohol (95 per cent) 100.
2. Glacial acetic acid 25, distilled water to make 50.
3. Hydrogen peroxide solution U. S. P. (3 per cent).

The original method is as follows:

To from 2 to 3 cc. of the fluid to be examined are added from 6 to 8 drops of the acetic acid solution, 2 cc. of amidopyrine solution, and 6 or 8 drops of hydrogen peroxide solution. The appearance of a lilac color is positive for blood. The author has increased the acetic acid solution to 16 drops and the peroxide solution to 12 drops, and states that this gives a more rapid and distinct coloration. The author also finds that, while the guaiac test is positive only in a 1:1,000 dilution of blood, amidopyrine shows blood in 1:21,000 dilution. The usual technic for extraction of occult blood from stomach content and feces was employed.

The test does not seem to have come into general use in America.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 5-6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

ARKANSAS: Regular Board, Little Rock, May 10-11. Sec., Dr. J. W. Walker, Fayetteville. Homeopathic Board: Little Rock, May 10. Sec., Dr. Allison A. Pringle, Eureka Springs.

CALIFORNIA: Los Angeles, May 16-19. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.

COLORADO: April 5. Sec., Dr. David A. Strickler, 1011 Republic Bldg., Denver.

DISTRICT OF COLUMBIA: April 12. Sec., Dr. Edgar P. Copeland, 1801 Eye St., Washington.

IDAHO: Boise, April 5-6. Commissioner of Law Enforcement, Hon. F. E. Lukens, Boise.

ILLINOIS: Chicago, April 5-7. Supt. of Registration, Mr. V. C. Michels, Springfield.

MINNESOTA: Minneapolis, April 5-7. Sec., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul.

MONTANA: Helena, April 5. Sec., Dr. S. A. Cooney, Helena.

NEVADA: Carson City, May 1. Acting Sec., Dr. Edward E. Hamer, Carson City.

NEW MEXICO: Santa Fe, April 11-12. Sec., Dr. W. T. Joyner, Roswell.

RHODE ISLAND: Providence, April 7-8. Sec., Dr. B. U. Richards, State House, Providence.

UTAH: Salt Lake City, April 5. Director of Registration, Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

WASHINGTON: Seattle, April 11. Reciprocity meeting only. Asst. Director of Licenses, Mr. George L. Berger, Olympia.

Kentucky December Examination

Dr. A. T. McCormack, secretary of the Kentucky State Board of Health, reports the written examination held at Louisville, Dec. 7, 1926. The examination covered 11 subjects and included 110 questions. An average of 75 per cent was required to pass. Of the 10 candidates examined, 9 passed and 1, an undergraduate, failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
Howard University School of Medicine	(1925)	84
Northwestern University Medical School	(1926)*	82
University of Illinois College of Medicine	(1925)	83
Indiana University School of Medicine	(1925)	82
University of Louisville School of Medicine	(1925) 85, (1926)	83
Eclectic Medical College, Cincinnati	(1926)	80
Vanderbilt University School of Medicine	(1901) 82, (1926)	88

FAILED College	Per Cent
Undergraduate	74

* This candidate has finished his medical course and will receive his M.D. degree on completion of a year's internship in a hospital.

Louisiana December Examination

Dr. Roy B. Harrison, secretary of the Louisiana Board of Medical Examiners, reports the written examination held at New Orleans, Dec. 9-11, 1926. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 25 candidates examined, 24 passed and 1 failed. Six candidates were licensed by reciprocity and 1 candidate received a temporary license. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
Howard University School of Medicine	(1925)	91.1
Northwestern University Medical School	(1926)	88
Flint Medical College of New Orleans University	(1910)	77.2
Tulane University of Louisiana School of Medicine	(1925) (1926) 82.2, 84.4, 87, 89.1, 89.4, 89.7, 89.9, 90	84.6,
Johns Hopkins University Medical Department	(1925)	89
Mississippi Medical College, Meridian	(1907)	76.5
University of Cincinnati College of Medicine	(1922)	86.7
Meharry Medical College	(1926)	84.4, 85.6
University of Tennessee College of Medicine	(1925) (1926) 85, 85.5	88.9,
Vanderbilt University School of Medicine	(1925)	84.9
Baylor University College of Medicine, Dallas	(1925)	89
College of Physicians and Surgeons, Dallas	(1908)	75
Medical College of Virginia	(1924)	92.3

FAILED College	Year Grad.	Per Cent
Memphis Hospital Medical College	(1910)	66

LICENSED BY RECIPROCITY College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1911)	Missouri
University of Louisville School of Medicine	(1921)	Kentucky
Tulane University of Louisiana School of Medicine (1924) Mississippi	(1922)	Alabama
St. Louis University School of Medicine	(1910)	Missouri
Washington University School of Medicine	(1924)	Missouri

Book Notices

REPORTS OF THE ST. ANDREWS (JAMES MACKENZIE) INSTITUTE FOR CLINICAL RESEARCH, ST. ANDREWS, FIFE. Vol. III. Edited by Prof. David Wateston, M.D., F.R.C.S.E. Cloth. Price, $3. Pp. 227, with 30 illustrations. New York: Oxford University Press, 1926.

This volume of the reports gives further evidence that the work of the St. Andrews Institute for Clinical Research is being carried on along the lines planned by its founder. Thus, stress is laid on the careful observation of common diseases such as mumps, and on the study and analysis of ordinary symptoms such as umbilical pain in children, rather than on the rarer things in medicine. Some of the papers strike one as elementary, repeating facts already well known and fully dealt with by other authors. Such is the article by Smith on the radiography of duodenal ulcer. There is more of the laboratory in this volume than one would expect from investigators who were brought up in the orthodox faith of Mackenzie, who so often and so severely criticized the laboratory. Papers in point are one on the nature of urinary protein, with especial reference to cases of eclampsia, and one by McLennan on organismal activities and chemical processes. An appreciative address by A. Maitland Ramsay in memory of Sir James Mackenzie is appropriately placed at the beginning of the book. The volume is a creditable one, and leads one to hope that the investigations planned by the founder may, in the hands of his successors, be richly productive.

DIE NIERENKRANKHEITEN IN DER PRAXIS. Von Professor Dr. C. R. Schlayer. Paper. Price, 3 marks. Pp. 101. Munich: J. F. Lehmanns, 1926.

In this short textbook for practitioners, the author has covered the subject adequately. The chapter on pyelitis and bacteriuria, renal tuberculosis and renal tumors is rather brief. The discussion of diagnostic methods is excellent, in that it gives the various tests that are available to the general practitioner who does not have an elaborate clinical laboratory at his disposal. The chapter on orthostatic albuminuria and the other pseudonephropathies is excellent, and the differential points between the true and the pseudonephropathies are brought out clearly. The true nephropathies are classified as acute and chronic nephritis, nephrosis and contracted kidney. The differential points are well brought out and the treatment outlined is conservative and based on modern principles. The chapters on renal edema and uremia are also satisfactory and the discussion of renal calculi is good. On the whole, the chapters on the true and pseudonephropathies, renal edema and uremia and diagnostic methods are better than those on other types of renal disease. The book is a valuable work for the general practitioner.

THE LOST LEGION: The Story of the Fifteen Hundred American Doctors Who Served with the B. E. F. in the Great War. By Dr. W. A. R. Chapin. Cloth. Price, $10. Pp. 408, with illustrations. Springfield, Massachusetts: Loring-Axtell Company, 1926.

Among the many contributions to the history of the World War, one of the most romantic was that of the fifteen hundred American physicians who were the first to enter the great conflict. The book is prefaced with a foreword by Dr. Franklin H. Martin, who tells how he promised Mr. Balfour to send these officers to the British army and how he fulfilled his promise. In his preface the author explains that the volume is reconstructed from a diary and from the records of many of the men who served. The explanation of the title of the volume lies apparently in the fact that our medical department forgot about these men after our entire army was in the war, so that they did not receive the rewards that were their due on account of length or character of service. Indeed, our army staff even refused to permit the British government to give these men medals in recognition of their work. The story of the experiences of these medical officers is a living account in simple language of the actual experiences that these men had. It may be well to permit them to state part of their grievances in their own words. "The great grievance that the 'Lost Legionaires' had against those who directed them from swivel chairs was that the latter lacked imagination. They had been given the men to use, and use them they did. Without leave, relief, or any consistent way of equalizing the burden, these doctors were sent out to the front to stay until they were worn out, killed or captured. Not only was promotion denied them, but the common ordinary courtesies rendered by every other allied service was missing. Fourteen months of front line duty with decorations and wound stripes meant nothing to the American authorities. They would be replaced but not relieved, and their only protective agency, the American Medical Association, was just as dilatory in righting this great wrong."

DIE KRANKHEITEN DER ENDOKRINEN DRÜSEN. Von Dr. Herman Zondek. Second edition. Paper. Price, 37.50 marks. Pp. 421, with 220 illustrations. Berlin: Julius Springer, 1926.

The first edition of this book appeared in 1923. In the meantime there have been numerous investigations in the field of endocrinology which have added greatly to the available facts. Much has been done with the individual cell and with establishing the relationships between the glands and other systems of the body and also between individual glands. The author has attempted to bring all this material into the present volume, which begins with a general consideration of the subject, including an historical introduction, and which presents also a separate analysis of each of the glands of internal secretion and the disorders related to its disturbances. The volume is perhaps the most completely illustrated of all of the available books in its field. The bibliography that accompanies the book seems to contain references to but few observations later than 1924, although much of the American work on the thyroid late in 1925 is given special attention.

DIE TUBERKULÖSEN ERKRANKUNGEN DES AUGES. Von Dr. Rudolf Bergmeister, Privatdozent für Augenheilkunde an der Universität Wien. Paper. Price, 6.60 marks. Pp. 143. Berlin: S. Karger, 1927.

The subject material is divided into seven main headings, essentially on an anatomic basis. In the main, the tuberculous conditions of the eye are discussed from the clinical standpoint, widely illustrated by case histories and citations from the literature, mainly German. In the beginning, the statement is made that tuberculosis of the eye is almost invariably secondary; that is, metastatic to tuberculosis elsewhere in the body. True enough; but the subsequent bald statement that "in all probability, tuberculosis is a true bacillemia" remains to be proved, although the impression throughout the entire dissertation is that ocular tuberculosis can be explained only on this basis. The modern concept of independent or accompanying focal infection as a cause of tuberculosis-like disease of the eye seems to have passed over the head of this adherent of the newer Vienna school of ophthalmology. The bibliographic phase of the book is extensive, but almost chauvinistic; the clinical descriptions are understandable to an ophthalmologist; and the discussions reveal an extensive acquaintance with the modern literature on systemic tuberculosis, both clinical and experimental. But the divine spark is lacking, and perusal of the book is more of a chore than a pleasure.

DIE DREI-DRÜSENTHEORIE DER HARNBEREITUNG. Von Dr. August Pütter, o. Professor, Direktor des physiologischen Instituts der Universität Heidelberg. Paper. Price, 9.60 marks. Pp. 173, with 6 illustrations. Berlin: Julius Springer, 1926.

This is an able, scholarly and compact monograph developing a partly new theory of kidney function. In the introduction, Professor Pütter complains that most monographic work on kidney function tends to close the doors rather than open them. This criticism is directed specifically against one of the latest, and in most respects best, monographs on this phase, namely, that by Cushny, the second edition of which came out last year. Many physiologists have felt that Cushny is straining the interpretation of many facts to support his filtration theory. Pütter marshals old established facts as well as new experimental data in support of what he calls the "three gland theory of kidney function." In substance, his theory runs as follows: The glomerular apparatus called by Pütter "water gland" excretes water (about 600 cc. daily

in man), and in this water are salts and other crystalloids in about the same concentration as in blood plasma. The convoluted tubules are called "nitrogen glands." The cells of these tubules secrete the nitrogenous elements of the urine. The descending loop of Henle, according to Pütter, absorbs some water and salt, returning it to the blood, while the main inorganic salt excretion takes place in the ascending loop of Henle, called "salt gland." Interesting figures are brought together showing the relative surface area of these renal elements of the kidneys of man and many other animals. The author presents references to the essential literature. He seems fair and critical in his analysis of known data. The monograph is accordingly a real contribution, both in physiology and in medicine. The novel theory of Pütter may be helpful in analyzing the complicated data and in suggesting new lines of experimental attack in different fields of renal disorders.

SKETCH OF THE HISTORY OF THE MAYO CLINIC AND THE MAYO FOUNDATION. From the Division of Publications, Mayo Clinic. Cloth. Price, $3.50. Pp. 185, with illustrations. Philadelphia: W. B. Saunders Company, 1926.

The significance of the Mayo Clinic and its influence on methods of practice in the United States, and indeed throughout the world, cannot be overestimated. Out of the practice of two young surgeons has grown an institution of world wide importance in which are carried on methods of diagnosis and treatment that have yielded astonishing results. The present account of the growth of this organization is essentially such as might be prepared by any accurate observer in that it provides a chronological record of events and a photographic presentation of various portions of the institution. One may search in vain, however, for any adequate criticism or interpretation of the difficulties that must inevitably have risen in the development and growth of the Mayo Clinic. One may search in vain also for any adequate analysis of the causes responsible for its phenomenal growth. This little book is valuable, for it contains an indication of the necessity for a book that might well be provided by one of the founders of the Mayo Clinic, giving an actual insight into the underlying psychology and romance that must inevitably have been associated with the progress of this remarkable demon tration in group medicine.

NOCIONES DE DERMATOLOGÍA Y SIFILOGRAFÍA. Por el Dr. Vicente Pardo Castello, professor auxiliar de dermatologia y sifilografía de la Universidad de la Habana. Leather. Pp. 730, with 208 illustrations. Havana, 1927.

The author, a well known Cuban dermatologist, disarms criticism by disclaiming all pretense to originality, his contribution being primarily intended for students and perhaps for general physicians. In this country, the chief interest in this book probably lies in its being inspired in American, or rather New York, sources—a pleasant departure, since Latin-American writers until recently relied almost exclusively on French literature for their material. The book is dedicated to Drs. G. M. Mackee, Howard Fox and Fred Wise of New York. A Spaniard might even take umbrage at the use of English rather than Spanish names for such conditions as foot and mouth disease, glossy skin, straw itch and Rocky Mountain spotted fever, and even for towns, as Aleppo, and for drugs, as trypan blue and tryparsamide. Because of the scarcity of reference works of this type in Spanish speaking countries, Dr. Pardo Castello's book will undoubtedly find a place in medical libraries. He has performed his appointed task thoroughly and conservatively, and what is even more important, concisely. As interesting sidelights, one notes that pellagra occurs only sporadically in Cuba; Madura foot, venereal granuloma and yaws are rare, and favus, leishmania infection and tropical sore are unknown. The absence of pinto, so common in Central America and Mexico, may seem strange. It is a pity more space was not given to similar information, emphasizing Cuban and tropical aspects of other skin diseases. A carping critic might wish for more editorial care to avoid misspelling of names of fungi and parasites as well as of the names of the authors Herxheimer-Jarisch, Weir Mitchell, Sabouraud and Schenk.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

AN INTRODUCTION TO THE HISTORY OF MEDICINE FROM THE TIME OF THE PHARAOHS TO THE END OF THE XVIIITH CENTURY. By Charles Greene Cumston, M.D., Lecturer on the History of Medicine and Medical Philosophy in the University of Geneva. With an essay on the relation of history and philosophy to medicine. By F. G. Crookshank, M.D., F.R.C.P. Cloth. Price, $5. Pp. 390, with 25 illustrations. New York: Alfred A. Knopf, 1926.

A philosophical concept of the rise of medical science.

A PRIMER FOR DIABETIC PATIENTS. A Brief Outline of the Treatment of Diabetes with Diet and Insulin, Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions. By Russell M. Wilder, M.D., Section on Nutrition, Division of Medicine, Mayo Clinic. Third edition. Cloth. Price, $1.50 net. Pp. 134, with 4 illustrations. Philadelphia: W. B. Saunders Company, 1927.

Brief guide for physician and patient—simply written and quite reliable.

FOUR THOUSAND YEARS OF PHARMACY: An Outline History of Pharmacy and the Allied Sciences. By Charles H. LaWall, Ph.M., Phar.D., Sc.D., Professor of Theory and Practice of Pharmacy and Dean of the Philadelphia College of Pharmacy and Science. Cloth. Price, $5. Pp. 665, with 64 illustrations. Philadelphia: J. B. Lippincott Company, 1927.

Fascinating account of progress in pharmacy from the Babylonian alchemist to the modern manufacturer.

NURSING MENTAL AND NERVOUS DISEASES FROM THE VIEW-POINTS OF BIOLOGY, PSYCHOLOGY AND NEUROLOGY. A Text-Book for Use in Schools for the Training of Nurses. By Albert Coulson Buckley, M.D., Medical Superintendent, Friends Hospital, Frankford. Cloth. Price, $3. Pp. 312, with 57 illustrations. Philadelphia: J. B. Lippincott Company, 1927.

If a nurse knows all this she can be a doctor.

CONCERNING ANEURYSMS. The Third Gordon Bell Memorial Lecture Delivered Before the Winnipeg Medical Society, on April 1, 1926. By Oskar Klotz, Professor of Pathology and Bacteriology, University of Toronto. University of Toronto Studies, Pathological Series. Paper. Price, 50 cents. Pp. 74. Toronto: University of Toronto Press, 1926.

Monograph on aneurysms with emphasis on syphilis and acute infections as important etiologic factors.

A MANUAL OF PHARMACOLOGY AND ITS APPLICATIONS TO THERAPEUTICS AND TOXICOLOGY. By Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland. Third edition. Cloth. Price, $7.50 net. Pp. 1184. Philadelphia: W. B. Saunders Company, 1926.

Completely revised and reset with cognizance of new discoveries and the new pharmacopeia.

SYMPTOM DIAGNOSIS, REGIONAL AND GENERAL. By Wilfred M. Barton, A.M., M.D., F.A.C.P., Associate Professor of Medicine, Medical Department of Georgetown University, and Wallace M. Yater, A.B., M.D., Fellow in Medicine, Mayo Foundation, Rochester. Cloth. Price, $10. Pp. 851. New York: D. Appleton & Company, 1927.

Synthetic diagnosis made simple by working backward from the symptoms.

DIE UNFRUCHTBARKEIT DER FRAU: Bedeutung der Eileiterdurchblasung für die Erkennung der Ursachen, die Voraussage und die Behandlung. Von Dr. Erwin Graff, a. o. Professor für Geburtshilfe und Gynäkologie an der Universität Wien. Paper. Price, 6.90 marks. Pp. 100, with 2 illustrations. Vienna: Julius Springer, 1926.

Monograph on sterility with special reference to inflation of fallopian tubes.

MOTHER AND UNBORN CHILD. A Little Book of Information and Advice for the Prospective Mother. By Samuel Raynor Meaker, Associate Professor of Gynæcology, Boston University School of Medicine. Cloth. Price, $2.50. Pp. 209, with 22 illustrations. Baltimore: Williams & Wilkins Company, 1927.

Dignified reliable book of advice which includes also care of the infant.

BIRTH, STILLBIRTH AND INFANT MORTALITY STATISTICS FOR THE BIRTH REGISTRATION AREA OF THE UNITED STATES, 1924. Tenth annual report. Paper. Price, 65 cents. Pp. 283. Washington: Government Printing Office, 1926.

CLINICAL METHODS: A Guide to the Practical Study of Medicine. By Robert Hutchison, M.D., F.R.C.P., Physician to the London Hospital, and Harry Rainy, M.D., F.R.C.P., F.R.S.E. Eighth edition. Cloth. Price, $5 net. Pp. 688, with 167 illustrations. New York: Paul B. Hoeber, 1927.

New edition of a standard British guide for practitioners.

HIGH BLOOD PRESSURE: Its Variations and Control. A Manual for Practitioners. By J. F. Halls Dally, M.A., M.D., B.Chir., Physician to the Mount Vernon Hospital for Tuberculosis and Diseases of the Heart and Lungs. Second edition. Cloth. Price, $4. Pp. 196, with 30 illustrations. New York: William Wood and Company, 1926.

Sandard consideration of hypertension.

A TERMINOLOGY OF DISEASE TO FACILITATE THE CLASSIFICATION OF HISTORIES IN HOSPITALS. By Adrian V. S. Lambert, M.D., Clinical Professor of Surgery, Columbia University. Third edition. Cloth. Price, $2.25 net. Pp. 158. New York: Paul B. Hoeber, 1926.

A terminology for use in systematizing reports and records in hospital and general practice.

HEWAT'S EXAMINATION OF THE URINE AND OTHER CLINICAL SIDE-ROOM METHODS. Revised by G. L. Malcolm-Smith, M.B., Ch.B., F.R.C.P., Clinical Registrar, Longmore Hospital, Edinburgh. Seventh edition. Cloth. Price, $1.50. Pp. 228, with illustrations. New York: Paul B. Hoeber, 1926.

Pocket size laboratory guide.

ELEMENTS OF SURGICAL DIAGNOSIS. By Sir Alfred Pearce Gould. Revised by Eric Pearce Gould, M.D., M.Ch., F.R.C.S., Assistant-Surgeon to the Middlesex Hospital. Sixth edition. Cloth. Price, $5 net. Pp. 739, with illustrations. New York: Paul B. Hoeber, 1927.

New edition with special attention to roentgenology and rearrangement of chapters.

INTRODUCTION TO PHYSIOLOGICAL CHEMISTRY. By Meyer Bodansky, Ph.D., Associate Professor of Physiological Chemistry, University of Texas. Cloth. Price, $4. Pp. 440, with illustrations. New York: John Wiley & Sons, Inc., 1927.

Textbook based on author's personal experience and training with varied masters.

EARLY DAYS OF THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK. By David Bryson Delavan, M.D., Consultant, St. Luke's Memorial, Ruptured and Crippled Hospitals. Cloth. Price, $1.50. Pp. 191, with 34 illustrations. New York City, 1926.

Memory book for those who were ever associated with this institution.

THE SPECIALTIES IN GENERAL PRACTICE. Compiled by Francis W. Palfrey, M.D., Instructor in Medicine at Harvard University. Cloth. Price, $6.50. Pp. 748. Philadelphia: W. B. Saunders Company, 1927.

A symposium covering the morbid conditions in the borderland between general practice and the medical specialties.

LECITHIN AND ALLIED SUBSTANCES—THE LIPINS. By Hugh MacLean, M.D., D.Sc., Professor of Medicine in the University of London, and Ida Smedley MacLean, D.Sc., F.I.C. Second edition. Boards. Price, $3.75. Pp. 220. New York: Longmans, Green & Company, Ltd., 1927.

Latest advances in biochemistry of lecithin.

THINKING ABOUT THINKING. By Cassius J. Keyser, Ph.D., LL.D., Adrain Professor of Mathematics, Columbia University. Cloth. Price, $1. Pp. 91. New York: E. P. Dutton & Company, 1926.

Another number of popular "Today and Tomorrow" series offering a method for detecting theories.

TECHNIQUE IN THE MANAGEMENT OF DIABETIC PATIENTS. By Henry J. John, M.A., M.D. Cloth. Price, $1.50. Pp. 62, with illustrations. Cleveland: William Feather Company, 1927.

Practical guide to technical procedures in the case of the diabetic patient.

COMMON SENSE ABOUT COMMON COLDS. By H. J. Burman, M.D., Nose and Throat Clinic, Lebanon Hospital. Paper. Price, 50 cents. Pp. 40. New York: Health Association Publishing Company, 1927.

A record of current practice but not so helpful at that!

DIE CHIRURGIE. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Lieferung 12. (Band IV. Teil 2.) Die Chirurgie der Speiseröhre. Von Prof. Dr. H. Schmerz. Die Chirurgie des Mediastinums. Von Prof. Dr. W. Wendel. Paper. Price, 20 marks. Pp. 274, with 96 illustrations. Berlin: Urban & Schwarzenberg, 1926.

ANNUAL REPORT OF THE COMMISSIONER OF INTERNAL REVENUE FOR THE FISCAL YEAR ENDED JUNE 30, 1926. Paper. Price, 25 cents. Pp. 223. Washington: Government Printing Office, 1926.

Medicolegal

Proceedings for Revocation of License—Valid Laws

(Hughes v. State Board of Medical Examiners (Ga.), 134 S. E. R. 42)

The Supreme Court of Georgia says that the state board of medical examiners caused to be served on defendant Hughes a notice preferring charges against him, which were: (1) conviction of crime involving moral turpitude; (2) causing the publication and circulation of an advertisement relative to diseases of the sexual organs, and the proposed curing of them. Before the charges were heard, he filed an equitable petition in the superior court to enjoin the board from proceeding with the hearing, alleging the unconstitutionality of the acts authorizing the hearing before the board, etc. In that case (*Hughes* v. *State Board of Medical Examiners*, 158 Ga. 602, 123 S. E. 879) this court held that the proceeding against the licentiate was quasicriminal in character, and that a court of equity under the general rule would not enjoin prosecution for criminal offenses or quasicriminal offenses, and affirmed the judgment of the court below in refusing to grant an injunction. After the notice was given to him and his counsel, the hearing before the board was had, at which he filed a demurrer and an answer, and introduced evidence in the case, after which he was found guilty on both charges. From this judgment of the board he filed an appeal to the superior court. On the hearing of the case in that court, the demurrer was overruled; and the supreme court now holds that the grounds of the demurrer were without merit and that the court did not err in overruling it.

In preferring charges against a practicing physician in order to revoke his license under the act of 1913 (acts of 1913, p. 101), as amended by the act of 1918 (acts of 1918, p. 173), it is not necessary to specify the law under which the charges are preferred, nor are those acts invalid because they do not provide who should prefer charges.

The acts of 1913 and 1918 just mentioned are not unconstitutional and void on the ground that they are violative of the due process clauses of the state and federal constitutions. These acts provide for notice of time and place of hearing, for service of the notice, for the production of the defendant's evidence, and for making his defense, and also for an appeal from the state board of medical examiners to a jury in the superior court; and this provides due process of law. Section 14 of the act of 1918, which provides that "said appeal to be had as in other cases now provided by law," is not void for uncertainty. The point was made that the time within which the appeal must be entered is not stipulated. But, under the general law, every appeal must be entered to the superior court within four days; and, unless there are provisions made in which a greater or less time is fixed for entering appeals in particular cases, the general provisions of the law in the civil code of 1910, section 5000, will control.

The language in section 14 of the act of 1918, which declares that a licentiate's name may be removed from the records in the office of any clerk of court in this state, and his license revoked on the ground of "conviction of crime involving moral turpitude," is not so vague, uncertain and indefinite as to render it void. The words "moral turpitude" are susceptible of accurate definition. The legislature may enact that one who has been convicted of crime "involving moral turpitude" shall not longer practice medicine.

The right to practice medicine is, like the right to practice any other profession, a valuable right, which is entitled to be protected under the constitution and laws of the state. But the state in the exercise of the inherent police power of the sovereign may place such restrictions on a licensee as may be necessary for the welfare and safety of society. A statute that regulates the right to practice medicine, but leaves the field open to all who possess the prescribed qualifications, does not abridge the privileges or immunities of citizens. A license to practice medicine is not a contract and does not give the licensee a right to continue in the practice in the future unrestricted; such license may be revoked for good

cause, and such revocation is not a taking of property without due process of law. Neither the act of 1913 nor section 14 of the act of 1918 is retroactive as applied to the facts of this case. The acts in question are not unjustly discriminatory and do not deny to the defendant the equal protection of the laws, for any reason assigned, so as to render them void.

Under the police power of the state the legislature may prohibit advertisements by licensed physicians with reference to "any disease of the sexual organs," and provide for a revocation of the license of such practicing physician on a majority vote of the state board of medical examiners for a violation of this provision of the act.

The question of the regulation of the professional conduct of physicians and of their fees is not of recent origin. "The oldest code of laws in the world," promulgated by Hammurabi, King of Babylon, B. C. 2285-2242, contains several provisions relative thereto.

Liability for Infection from Use of Water and Towel

(Gulf, C. & S. F. Ry. Co. v. Boss (Texas), 285 S. W. R. 939)

The Court of Civil Appeals of Texas, in reversing a judgment for $2,500 damages rendered in favor of plaintiff Boss, a member of one of the defendant railway company's section gangs, says that he based his cause of action on the alleged fact that, when he went to a dinner at one of the company's section houses, in washing and drying his face he used water and a towel which the foreman of the gang had used, and as a result became infected with gonorrhea, whereby his sight was greatly impaired. The jury found that the foreman had gonorrhea as charged by the plaintiff; that the plaintiff became infected with the disease by washing his face in the same water in which the foreman had washed, or by using the same towel which the foreman had used; that the foreman was guilty of negligence in permitting the plaintiff to use such water and towel; and that such negligence was the proximate cause of the plaintiff's becoming so infected. The plaintiff stated in his brief that he commenced and prosecuted this suit against the railway company on the theory that the foreman was a vice principal of the company and therefore that any acts of his were the acts of the company itself. It might be conceded that the foreman was such a vice principal while in the company's service as section foreman and while engaged in the discharge of duties within the scope of his employment; but he not only was not such a vice principal, but he was not a representative of the company in any capacity when he was not acting within the scope of his employment; and the company was not liable as charged by the plaintiff and as determined by the trial court. Doubtless the foreman violated a moral if not a legal duty he individually owed to the plaintiff when he permitted him to use the water and towel, but certainly he did not thereby violate any duty that the railway company, or he as the company's foreman, owed the plaintiff.

Validity of Quo Warranto Law Applied to Chiropractor

(Harris v. State ex rel. Wilson, Solicitor (Ala.), 109 So. R. 291)

The Supreme Court of Alabama says that the state, on relation of the circuit solicitor, instituted proceedings in the nature of quo warranto against the respondent, who, the information charged, "has intruded into the profession of treating or offering to treat diseases of human beings (a profession requiring a license or certificate or other legal authorization within this state), without having obtained a certificate of qualification from the state board of medical examiners of the state of Alabama or the license required by law, and is still unlawfully practicing said profession in Pickens County, Ala."

The prayer was that he be ousted from such profession and prohibited from practicing it.

On the trial, the evidence showing without conflict that the respondent was engaged in the business or profession of a "chiropractor," and a certificate of qualification not being shown, the court gave an affirmative charge for the state. Whatever the theory of the relation of chiropractic adjustment to disease, the chiropractor is one of those required by law to have a certificate of qualification to treat diseases of human beings. "Chiropractic" is specially named as one of the schools of "mechanotherapy" in whose favor all educational qualifications are waived except a diploma showing graduation from such school. The subjects on which the applicants are examined are limited. The certificate entitles the holder to treat in accordance with the teachings of his "school" or "sect." That quo warranto proceedings, under subdivision 1 of section 9932 of the code, against any person who intrudes into any profession requiring a certificate or other legal authorization, may be maintained against chiropractors, has been recently considered and declared by this court.

But it was contended in this case that the statute (section 9932) violates section 8 of the state constitution of 1901, which provides "that no person shall, for any indictable offense, be proceeded against criminally, by information," etc. The argument seemed to be that intruding into a profession being made criminal by statute, the quo warranto proceeding to prohibit such act is criminal in character, and subject to the foregoing section (of the constitution). That section, however, relates to criminal prosecutions of indictable offenses, with exceptions named; cases wherein the accused party is to be subjected to punishment for crime theretofore committed. Quo warranto proceedings as now known are to try the right of the party to public office, or to a privilege or franchise he assumes to exercise, and, if not lawfully entitled thereto, oust him from future enjoyments thereof. They do not carry a fine or other punishment, as at common law, for past usurpation. Whether instituted on relation of a public official or a private person, it is not a criminal proceeding for an indictable offense within the meaning of section 8 of the constitution. That the legislature may provide cumulative remedies, civil, quasicriminal or criminal, to make its legislation more effective, is illustrated by many statutes and decisions.

The evidence for the state being direct, positive and undisputed that the respondent was engaged in the work or profession of a chiropractor, the affirmative charge for the state was properly given; but, for error in denying the right of argument to counsel for the respondent, the judgment for the plaintiff must be reversed and the cause remanded.

Damages for Psychoneurosis—Opinions from History

(Boyle v. Philadelphia Rapid Transit Co. (Pa.), 134 Atl. R. 446)

The Supreme Court of Pennsylvania says that Mrs. Boyle for herself and on behalf of her minor daughter sued to recover compensation for injuries received by the latter from being struck by one of the defendant's trolley cars. A verdict was returned in favor of the mother for $500, and of the daughter for $16,000, the latter amount being reduced by the court below to $11,500. While the plaintiff did not prove permanent bodily injuries or disfigurement, and the daughter had to a considerable extent recovered from the effects of the accident at the time of the trial, the testimony of physicians was to the effect that she was suffering from a functional condition of the nervous system known as psychoneurosis (a disease similar to that in recent years frequently described as "shell shock"), which the physicians testified was the result of the accident, and that persons afflicted as she was "sometimes . . . get well for a while and relapse, so they are an uncertain proposition." Under the circumstances, the verdict as reduced was not so excessive as to require interference by this court.

One of her physicians, who testified that the daughter suffered from a functional condition of her nervous system, on being asked whether he was able to form an opinion as to the cause of the nervous disturbance, on objection made and overruled, stated: "I have to take a history always in order to determine any cause. . . . From the history I should say that her condition was due to a trauma, to a physical trauma, possibly a fright combined with it." On further inquiry as to the cause, he said: "It was the blow which she received, or told me she received, and the bruises she had as evidence of a blow." The defendant argued that this permitted the witness to testify to his conclusion based on hearsay evidence rather than on facts testified to in the

trial, and assumed for the purpose of the question to be true. But in this case the physician was merely testifying to the condition of the patient and his diagnosis of her ailment, based on answers made by her to his questions. The diagnosis was thus made on the combined evidence of information received from his patient, corroborated by perceptible body marks, such as bruises on various parts of the body, which she said were the result of the accident. It was not denied that the car struck her and that bodily injury was inflicted as a result of the collision. While a physician should not be permitted to testify to or base his opinion on hearsay evidence not before the jury, or testify to declarations of the patient as to the cause of the injury, he may testify to statements made by the patient relating to conditions, symptoms, and feelings for the purpose of receiving medical advice; such being the case here, it necessarily followed that the opinion of the physician, based on information of that description, was competent. The fact that the patient stated that she received a blow, as evidenced by the bruises which served to corroborate her statement, was properly received as forming the basis of the opinion of the physician.

Risk Assumed of Conditions Deleterious to Health

(Wager v. White Star Candy Co., Inc. (N. Y.), 217 N. Y. Supp. 173)

The Supreme Court of New York, appellate division, third department, in reversing a judgment for $2,000 damages rendered for the plaintiff, and in directing the complaint to be dismissed, says that the complaint charged that, as an employee of the defendant, she was required for four months to work in a damp, insanitary, unventilated cellar and for two months in a room on the first floor which was not properly heated, and that she was subjected to drafts. Physicians testified that at the end of that time she was suffering from tuberculosis, and that the development of the tuberculous condition was directly attributable to her surroundings during her working hours. It was contended that her sole remedy lay in filing a claim under the workmen's compensation law, but the court does not think that she was debarred by the provisions of that law from bringing this action, as she did not sustain an accidental injury, since there was not a sudden occurrence referable to a definite time or place. Nevertheless, she must fail in her action because she was fully aware of the conditions under which she worked, and continued in the employment from June to December in spite of such knowledge. She testified that the walls of the cellar were wet to the touch; that a cesspool backed up liquids which wet the floor; that the cellar was devoid of windows to light or air it; that dead rats were left about; that the upstairs room was damp. It is common knowledge that such conditions are deleterious to health. The plaintiff was chargeable with such knowledge; and, as a matter of law, assumed the risk attendant on remaining in the employment.

Husband Keeping in His Home a Once Dangerous Lunatic

(Crouch v. Crouch (Md.), 133 Atl. R. 725)

The Court of Appeals of Maryland says that a wife undoubtedly has the right to refuse to live with her husband when he insists on keeping in his home a person who has been a dangerous lunatic, and who, according to the medical testimony, may become dangerous again. Such conduct, if persisted in, would, in this court's opinion, constitute cruelty on the part of the husband, if the wife continued to reside in his home despite her fears of the insane person, or it would justify the wife in leaving the husband's home and render the husband guilty of constructive desertion if he declined to remedy the situation within a reasonable time. In the present case, however, the court does not think that the wife, who sought a divorce partly on the ground of cruelty in that her husband permitted his brother, who had once been a dangerous lunatic and according to medical testimony might become one again, to stay at his home, had satisfactorily proved that she actually left because of the brother's presence; while, even if this was her reason for leaving, the court is of the opinion that, under all the circumstances of this case, she was not justified in basing an action for divorce on it.

Society Proceedings

COMING MEETINGS

American Medical Association, Washington, D. C., May 16-20. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

Alabama, Medical Association of the State of, Montgomery, April 19-22. Dr. D. L. Cannon, 519 Dexter Ave., Montgomery, Assistant Secretary.

American Association for Thoracic Surgery, New York, May 9-11. Dr. Ethan Flagg Butler, Robert Packer Hospital, Sayre, Pa., Secretary.

American Association of Anatomists, Nashville, Tenn., April 14-16. Dr. L. H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American Association of Genito-Urinary Surgeons, Absecon, N. J., May 9-11. Dr. W. C. Quinby, Peter Bent Brigham Hospital, Boston, Sec'y.

American Association of Pathologists and Bacteriologists, Rochester, N. Y., April 15-16. Dr. H. T. Karsner, School of Medicine, Western Reserve University, Cleveland, Secretary.

American Bronchoscopic Society, Atlantic City, May 21. Dr. H. B. Orton, 24 Commerce Street, Newark, N. J., Secretary.

American Child Health Association, Washington, D. C., May 9-11. Dr. Philip Van Ingen, 125 East 71st Street, New York, Secretary.

American Gastro-Enterological Association, Atlantic City, May 2-3. Dr. John Bryant, 338 Marlborough Street, Boston, Secretary.

American Pharmacological Society, Rochester, N. Y., April 14-17. Dr. E. D. Brown, University of Minnesota, Minneapolis, Secretary.

American Proctologic Society, Philadelphia, May 12-14. Dr. Louis A. Buie, Mayo Clinic, Rochester, Minn., Secretary.

American Physiological Society, Rochester, N. Y., April 14-16. Dr. W. J. Meek, University of Wisconsin, Madison, Secretary.

American Radium Society, Washington, D. C., May 16-17. Dr. E. C. Ernst, 412 Humboldt Building, St. Louis, Secretary.

American Society for Experimental Pathology, Rochester, N. Y., April 14-16. Dr. E. B. Krumbhaar, Philadelphia General Hospital, Philadelphia, Secretary.

American Society of Biological Chemistry, Rochester, N. Y., April 14-16. Dr. F. C. Koch, University of Chicago, Chicago, Secretary.

American Society of Clinical Investigation, Atlantic City, May 2. Dr. J. T. Wearn, Boston City Hospital, Boston, Secretary.

American Society of Clinical Pathologists, Washington, D. C., May 13-16. Dr. Ward T. Burdick, Children's Hospital, Denver, Secretary.

American Surgical Association, Richmond, Va., May 12-14. Dr. R. B. Greenough, 8 Marlborough Street, Boston, Secretary.

American Therapeutic Society, Washington, D. C., May 14-16. Dr. W. J. Mallory, 1720 Connecticut Ave., N. W., Washington, D. C., Secretary.

Arizona State Medical Association, Yuma, April 21-23. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

Arkansas Medical Society, Little Rock, May 11-13. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Associated Anesthetists of the United States and Canada, Washington, D. C., May 16-17. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

Association of American Physicians, Atlantic City, May 3-4. Dr. F. W. Peabody, Boston City Hospital, Boston, Secretary.

California Medical Association, Los Angeles, April 25-28. Dr. Emma W. Pope, 593 Market Street, San Francisco, Secretary.

Federation of American Societies for Experimental Biology, Rochester, N. Y., April 14-16. Dr. F. C. Koch, University of Chicago, Chicago, Secretary.

Florida Medical Association, West Palm Beach, April 5-6. Dr. Shaler Richardson, 111 W. Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Athens, May 11-13. Dr. Allen H. Bunce, 65 Forrest Avenue, Atlanta, Secretary.

Hawaii Territorial Medical Association, Honolulu, May 2-4. Dr. F. J. Pinkerton, 46 Young Building, Honolulu, Secretary.

Iowa State Medical Society, Council Bluffs, May 11-13. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Hutchinson, May 3-5. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, April 26-28. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Medical Library Association, Washington, D. C., May 16-17. Miss Sue Biethan, General Library, University of Michigan, Ann Arbor, Sec'y.

Medical Women's National Assoation, Washington, D. C., May 15-17. Dr. Maud Parker, Medical Dental Building, Seattle, Secretary.

Mississippi State Medical Association, Vicksburg, May 10-12. Dr. T. M. Dye, McWilliams Building, Clarksdale, Secretary.

Missouri State Medical Association, Sedalia, May 2-5. Dr. E. J. Goodwin, 901 Missouri Building, St. Louis, Secretary.

Nebraska State Medical Association, Lincoln, May 10-12. Dr. R. B. Adams, McKinley Building, Lincoln, Secretary.

New Mexico Medical Society, Carlsbad, May 9-11. Dr. C. M. Yater, 310 N. Richardson Avenue, Roswell, Secretary.

New York, Medical Society of the State of, Niagara Falls, May 9-12. Dr. D. S. Dougherty, 2 East 103d Street, New York, Secretary.

North Carolina, Medical Society of the State of, Durham, April 18-21. Dr. L. B. McBrayer, Southern Pines, Secretary.

Ohio State Medical Association, Columbus, May 10-12. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.

Oklahoma State Medical Association, Muskogee, May 4-6. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.

South Carolina Medical Association, Anderson, April 19-21. Dr. E. A. Hines, Seneca, Secretary.

South Dakota State Medical Association, Huron, May 3-5. Dr. John F. D. Cook, Langford, Secretary.

Tennessee State Medical Association, Chattanooga, April 12-14. Dr. J. F. Gallagher, 810 Bennie-Dillon Building, Nashville, Secretary.

Texas, State Medical Association of, El Paso, April 26-28. Dr. Holman Taylor, 207½ West 11th Street, Fort Worth, Secretary.

Western Physiotherapy Association, Kansas City, Mo., April 8-9. Dr. Charles Wood Fassett, 115 East Thirty-First Street, Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

38: 319-502 (Jan. 15) 1927

*Histologic Studies on Endocrines of Chickens Deprived of Ultraviolet Light: I. Parathyroids. J. F. Nonidez and H. D. Goodale, Williamstown, Mass.—p. 319.
Fate of Ultimobranchial Body in White Rat (Mus Norvegicus Albinus). W. M. Rogers, Ithaca, N.Y.—p. 349.
Growth of Human Prenatal Hypophysis and Hypophysial Fossa. W. P. Covell, Minneapolis.—p. 379.
*Absorption of Vital Dyes by Fetal Membranes of Chick: I. Vital Staining of Chick Embryo by Injections of Trypan Blue into Air Chamber. E. B. Hanan, New York.—p. 423.
Origin and Development of Venous Valves; Saphenous District. O. F. Kampmeier and C. la Fleur Birch, Chicago.—p. 451.

Effect of Ultraviolet Rays on Endocrines.—Nonidez and Goodale noted that the combined effect of a lack of direct sunlight and a ration poor in antirachitic vitamin on the parathyroids of growing chicks is expressed in enlargement of these glands. Microscopic examination of the glands shows that this enlargement is due to increase in cell size (hypertrophy), and increase in numbers of the epithelial cells (hyperplasia). The phase of hypertrophy and hyperplasia is followed by a phase of regression during which the epithelial cords appear shrunken. Shrinkage of the cords may coincide with hyperplasia of the stroma. Local degenerative changes, such as production of keratin and mucous degeneration, were present in the regressed glands of some of the chickens examined. It is suggested that these phenomena are not the immediate result of the treatment, but are caused by some other factors of unknown nature, and that degenerative tendencies are probably favored by the abnormal condition of the glands. The parathyroids of chickens that are deprived of ultraviolet rays for five weeks and subsequently exposed to direct sunlight are much smaller than the corresponding organs in younger birds not receiving exposure. Microscopic examination shows that the decrease in volume of the glands is due to a decrease in cell size resulting in considerable crowding of the epithelial cells. Pressure atrophy also occurs in some of the glands.

Vital Staining of Chicken Embryo.—Hanan describes his method of injecting trypan blue and other dyes into the air chamber or albumin of the chicken's egg by means of tuberculin syringes.

Annals of Clinical Medicine, Baltimore

5: 521-591 (Dec.) 1926

Prognosis and Treatment in Anemias. T. B. Cooley, Detroit.—p. 521.
*Periarterial Sympathectomy. F. W. Vaughan, Detroit.—p. 529.
*Desensitization. A. Sterling, Philadelphia.—p. 536.
Use of Vaccines and Serums in Communicable Diseases. R. O. Clock, Pearl River, N. Y.—p. 543.
Circulatory Syphilis: One Hundred Cases. N. Strauss, New York.—p. 562.
*Urine Test as Aid in Establishing Maintenance Diet in Diabetes Mellitus. A. Galambos, New York.—p. 567.

Periarterial Sympathectomy.—Vaughan reports two cases—one of arteriosclerosis, and the other a true endarteritis obliterans—in which periarterial sympathectomy was performed. In one of the cases the relief has lasted for more than three years. In the second case, a man, aged 82, the pain disappeared at the end of the first week. A year later the man reported a painless and useful foot.

Desensitization of Asthmatics.—Sterling regards desensitization as being very successful, and the best method of treatment for the relief or cure of asthma. About 15 per cent of the patients do not improve from the desensitization treatment alone, unless combined treatment, such as drugs, and roentgen ray is also instituted. In about 15 per cent of the hypersensitive patients, desensitization is unsuccessful on account of the presence of some grave complication such as (*a*) inflammatory changes in the respiratory system; (*b*) cardiorenal disturbances; (*c*) deficiency in the glands of internal secretion, or (*d*) in the presence of pulmonary tuberculosis.

Test for Postcenal Glycosuria.—Galambos stresses the fact that the elimination of dextrose is not a continuous process. Glycosuria may be present only periodically, for an hour or so, about one hour after the intake of carbohydrates, the twenty-four hour urine being free of sugar; that is, it does not give dextrose reaction, while fractional portions, especially those voided from forty-five to seventy-five minutes after the ingestion of the carbohydrates, may contain dextrose in a small portion. This is the postcenal, temporary glycosuria. Examination to discover postcenal temporary glycosuria requires arrangement and distribution of the carbohydrates ingested. They are prescribed for a twenty-four hour period, and are equally divided into three portions, taken in three similar meals. Both are to be examined, the twenty-four hour urine, and the single urine portion collected two hours after any of the three meals. The tolerance test with the two hour urine portions covers practically the utilization test for the twenty-four hour urine. A certain amount of insulin, if administered in equal portions before each meal for a certain length of time, does not change the trend and significance of this functional test. In searching for the presence of the first traces of dextrose, the most sensitive reaction can be elicited by using Fehling's reagent; the next most sensitive from Nylander's and one less sensitive by means of Benedict's solution. This test of the postcenal glycosuria is offered as a substitute for the more complicated systematic blood sugar determinations.

Annals of Surgery, Philadelphia

85: 1-160 (Jan.) 1927

*Septic Osteomyelitis of Bones of Skull and Face. V. P. Blair and J. B. Brown, St. Louis.—p. 1.
Benign Bony Enlargement of Condyloid Process of Mandible. R. H. Ivy, Philadelphia.—p. 27.
*Cerebrospinal Fluid Leak Due to Fistula of Cisterna Magna. R. P. Ball and R. G. Spurling, Louisville, Ky.—p. 31.
*Osteoplastic Support of Spine in Pott's Disease. R. R. Wreden, Leningrad, Russia.—p. 35.
Operative Relief of Laryngostenosis. A. Schwyzer, St. Paul.—p. 40.
*Postoperative Pulmonary Embolism. K. Speed, Chicago.—p. 44.
*Postoperative Massive Collapse of Lung. W. P. Hearn and L. H. Clerf, Philadelphia.—p. 54.
*Massive Hypertrophy of Breasts. S. C. Plummer and W. S. Bump, Chicago.—p. 61.
*Congenital Hypertrophic Pyloric Stenosis. A. C. Strachauer, Minneapolis.—p. 67.
*Duodenal Diverticulitis. N. J. Maclean, Winnipeg, Can.—p. 73.
Diverticulitis of Sigmoid. W. D. Haines, Cincinnati.—p. 84.
*Mortality in Appendicitis. A. P. C. Ashhurst, Philadelphia.—p. 89.
*Repair Processes in Wounds of Tendons and Tendon Grafts. J. H. Garlock, New York.—p. 92.
Danger of Infection About Face. J. W. Hinton, New York.—p. 104.
Adenoma of Thyroid. W. B. Parsons, Jr., New York.—p. 107.
*Vasomotor Reflex Arc. E. Andrews, Chicago.—p. 116.
Malignant Growths of Thyroid. E. H. Pool, New York.—p. 120.

Septic Osteomyelitis of Bones of Skull and Face.—Blair and Brown report fifteen cases and review the literature briefly. In treatment they advocate hygiene, drainage, removal of exfoliated bone, raising the patient's resistance to an apparently low-grade infection, and quartz light treatment.

Cerebrospinal Fluid Leak Due to Fistula of Cisterna Magna.—Ball and Spurling report the case of a man who suffered a stab wound of the posterior cervical region which presumably entered the cisterna magna, with a resulting fistula from which cerebrospinal fluid drained for seventeen days. On the twelfth day following the injury a cerebrospinal meningitis developed, from which the patient completely recovered. During the course of the illness gentian violet, phenolsulphonphthalein, methenamine and sodium salicylate were administered, and observations were made on the effects of each on the cerebrospinal fluid.

Osteoplastic Support of Spine in Pott's Disease.—When the disease is located in the lower section of the vertebral column,

i. e., in the lumbar and the last two dorsal vertebrae, Wreden transfers the weight of the trunk from the diseased vertebrae to the pelvis by implanting tibial grafts in various ways, transversely and as a pyramid.

Postoperative Pulmonary Embolism.—Speed analyzed thirty cases. The operations have varied, not all having been in the lower abdominal cavity. The number of deaths was twenty-three, a mortality of 77 per cent. The nonfatal cases were pyelotomy, ventral hernia, postoperative hernia, electric burns, gastro-enterostomy, cystotomy for stone, and operation on the neck of the femur. A fear of death before and immediately during the embolism was manifested only by four patients as far as the records show. The operative wound was infected in twelve of the patients. Postoperative fever, usually starting immediately after the operation, was present in all but five patients. A leukocytosis was present in all but four instances. The average time elapsing between operation and onset of symptoms in the twenty-three fatal cases was about seven days, the longest being twenty-five days, the shortest, one day. Thrombosis was noticed in seven cases. This thrombosis occurred in the leg six times and the thigh, once. In one instance, a nonfatal case of pyelotomy, it involved both legs. The symptoms of embolism first noticed were usually sharp pain in the chest, frequently referred to the midline and substernal or epigastric regions. In some instances the pains were lateral, as pleuritic pain. Cough, a rise in temperature and beginning pathologic changes of the chest followed in the average patient, who survived a few days. The records show that only eleven patients gave positive chest conditions. This is explained partly by the fact that many of the emboli were massive and death followed within a few minutes, not permitting chest examination. In other cases, chest examination was not made and recorded.

Postoperative Massive Collapse of Lung.—In the case reported by Hearn and Clerf, bronchial obstruction was present, consisting of thick, tenacious secretion. Bronchoscopic removal of the obstruction was followed by a partial return of pulmonary function. Early bronchoscopic investigation is urged in a case of postoperative pulmonary collapse, if the surgeon and the internist deem it a safe procedure in the particular case.

Massive Hypertrophy of Breasts.—The hypertrophy in the case cited by Plummer and Bump was due to an increase in fat. The left breast, immediately after amputation, weighed 9 pounds and 2 ounces (4.1 Kg.); the right, 9 pounds (4 Kg.).

Surgery In Congenital Hypertrophic Pyloric Stenosis.—In forty-eight cases Strachauer performed two gastro-enterostomies and forty-six Rammstedt operations with the loss of one infant, a mortality of 2 per cent.

Duodenal Diverticulitis.—Besides reporting four cases, Maclean calls attention to the fact that such diverticula were present in two out of every twelve specimens of duodenum examined by J. C. B. Grant. In three years thirty-seven bodies were examined, and in six, diverticula of the duodenum were present, an average of 16.2 per cent. Maclean removes diverticula attached to the third and fourth part of the duodenum and behind the pancreas by a transduodenal diverticulectomy, a method of removal original with him.

Mortality in Appendicitis.—Among 247 cases of appendicitis so far advanced as to require drainage, there were ninety-eight cases of primary abscess, forty-four of gangrene and sixty-eight of diffuse peritonitis. All of these patients were operated on as soon as possible after admission to the hospital. Ashhurst reports a mortality of 8.1 per cent, 4.5 per cent and 16.1 per cent, respectively. Among thirty-seven cases of diffuse peritonitis in which operation was delayed, six patients died without operation. In twenty cases, the abscess was drained and the appendix was not removed. The mortality in this group was 35 per cent. In a group of eleven similar cases in which the appendix was removed, the mortality was nil.

Repair Processes in Tendons.—Garlock describes free tendon transplanting and advocates instituting active motion about the tenth postoperative day, maintaining the retention apparatus during the periods of inactivity. It seems that it is unwise to remove this apparatus until about the twenty-fifth day after operation.

Vasomotor Reflex Arc.—Posterior root section done by Andrews in a case of obstructive edema of the arm, following removal of a breast for carcinoma, produced such extreme vasodilation that the edema almost disappeared within forty-eight hours. This was a transient phenomenon, and recurrence took place in about a month.

Archives of Internal Medicine, Chicago

39: 1-162 (Jan.) 1927

*Heart and Aorta in Early Syphilis. K. B. Turner and P. D. White, Boston.—p. 1.
*Alterations in Permeability of Skin Capillaries During Pregnancy and Puerperium. W. F. Petersen and A. F. Lash, Chicago.—p. 12.
*Permeability of Skin Capillaries in Various Clinical Conditions. W. F. Petersen, Chicago.—p. 19.
*Tolerance in Respect to Meningocerebral Manifestations of Acute and Subacute Lead Poisoning. C. V. Weller, Ann Arbor, Mich.—p. 45.
*Detoxication of Putrefactive Products by Human Body. F. W. Power and C. P. Sherwin, New York.—p. 60.
*Diabetes: One Thousand Cases. H. J. John, Cleveland.—p. 67.
*Diet Determinations: Graphic Method. D. W. Richards, Jr., and A. F. Coburn, New York.—p. 93.
*Fragilitas Ossium and Deafness. J. J. Shugrue, R. Rockwood and E. W. Anderson, Rochester, Minn.—p. 98.
*Mechanism of Pain in Gastric and Duodenal Ulcer: III. Rôle of Peristalsis and Spasm. W. L. Palmer, Chicago.—p. 109.
*Giardiasis in Man: Prevalence and Relation to Diarrhea and to Gallbladder Disease. W. C. Boeck, Boston.—p. 134.

Heart and Aorta in Early Syphilis.—A study made by Turner and White of fifty cases of early syphilis did not show any definite clinical evidence of disease of the heart or aorta in any case. A study of the literature shows that clinical evidence of cardiovascular disease in early syphilis is rare.

Permeability of Skin Capillaries During Pregnancy.—Petersen and Lash found that the capillary permeability of the skin during pregnancy averages 70.5 (forty-seven cases). During labor, the permeability is reduced and the blister time increased (sympathetic tonus of the skin). During the puerperium, the average permeability is 73.6 (fifty-five cases). Psychosis, hematemesis, threatened abortion, postpartum eclampsia and sepsis were associated with increased permeability. Hypertension and nephritis were either high or low in capillary permeability, except in one case.

Permeability of Skin Capillaries in Various Conditions.—Capillary permeability of the skin vessels and the relative autonomic tonus of the arterioles has been studied by Petersen by means of the cantharides blister in many clinical conditions. Capillary permeability was found to be increased in generalized dermatitis, decompensation, glomerulonephritis, obesity, acute infections, active tuberculosis, peptic ulcer, Paget's disease of the bones, arthritis deformans and following surgical operations. It was diminished in chronic nephritis, chronic tuberculosis, carcinoma of the stomach and exophthalmic goiter with a high blood pressure.

Experimental Tolerance to Lead Poisoning.—The results of Weller's work constitute a demonstration of experimentally induced tolerance to lead poisoning in respect to the meningocerebral manifestations as they occur in the guinea-pig.

Detoxication of Putrefactive Products.—Power and Sherwin show that the human body is apparently provided with a chemical defense mechanism nonspecific in character which is more than adequate for the detoxication of the small amount of putrefactive products normally produced in the human intestine by the action of putrefactive bacteria on unabsorbed protein material.

Analysis of One Thousand Cases of Diabetes.—One thousand cases of diabetes are analyzed by John. The incidence of syphilis in this series was 2.6 per cent. There was an hereditary history of diabetes in 4.6 per cent, and a familial history in 5.1 per cent. The highest blood sugar level on admission was 908 mg. per hundred cubic centimeters. Blood sugar figures as high as 310 mg. per hundred cubic centimeters were encountered without glycosuria. The diabetic renal threshold was high in many cases. The general belief that insulin once used must always be continued is shown to be fallacious by the cases in which good progress has followed

the discontinuance of insulin. The mortality rate in thirty-five operations on diabetic patients in this series was 20 per cent. By the exclusion of four cases in which death was due to septicemia, which was present at the time of the operation, or to inoperable carcinoma, the mortality rate is reduced to 8.5 per cent. There were twenty-eight cases of diabetic coma. The blood sugar in these cases ranged from 200 to 810 mg. per hundred cubic centimeters; the plasma acetone from 0 to 3 plus, and the plasma carbon dioxide from 44.3 to 9.9 mm. of pressure. The higher figures in the last instance were due to the administration of insulin previous to the carbon dioxide determination.

Diet Determinations.—For the determination of the protein, carbohydrate and fat constituents of a diet, without calculation, a graphic method is presented by Richards and Coburn. This can be used for many types of diet, and for a wide range of fat-carbohydrate ratios.

Fragilitas Ossium and Deafness.—In four cases with blue sclerotics, brittle bones and deafness presented by Shugrue et al. two are definitely hereditary while the other two do not reveal any familial tendency. The source of these groups seems to be from Europe. One of the cases definitely follows the mendelian law.

Mechanism of Pain in Peptic Ulcer.—Palmer summarizes his paper as follows: Peptic ulcer with true achlorhydria occurs rarely, and the question of the occurrence and type of pain in such cases is unsettled. Hydrochloric acid is the normal stimulus to the pain-producing mechanism of sensitive peptic ulcers. Normal gastric peristalsis may be an adequate mechanical stimulus in very sensitive ulcers. Hydrochloric acid may sensitize both the sensory and motor gastric mechanisms. Evidence has not been found to support the view that hyperchlorhydria may cause typical ulcer pain in the absence of a definite organic lesion of the gastric or duodenal mucosa. Exact localization and differentiation of different types of enteric pain may be very difficult, if not, at times, impossible. Under differing conditions, acid irritation and muscle tension may be responsible for all, a part or none of the pain of gastric carcinoma.

Giardiasis in Man.—In Boeck's opinion evidence of scientific value is lacking at present to support the theory of Barrow that *Giardia lamblia* is concerned in the etiology of arthritis deformans, certain forms of neurasthenia, melancholia with loss of weight and such symptoms as nausea, vomiting, belching of gas, epigastric pain and tenderness.

Archives of Otolaryngology, Chicago

5: 1-107 (Jan.) 1927

Voice Test of Hearing. D. Macfarlan, Philadelphia.—p. 1.
Puncture of Round Window Membrane: Experiments on Saccus Endolymphaticus in Rabbit. W. J. McNally, Montreal.—p. 30.
*Mastoid Infections in Infants. A. M. Alden, St. Louis.—p. 39.
*Diagnosis of Sinus Thrombosis. R. Ottenberg, New York.—p. 43.
Hooklike Instrument for Extraction of Foreign Bodies from Bronchi. M. Sasaki. Fukuoka, Japan.—p. 46.
New Myringotomy Knife. C. A. Campbell, Steubenville, O.—p. 47.
Functional Examination of Hearing: Deaf-Mutism and Education of Deaf. R. Sonnenschein, Chicago.—p. 48.

Mastoid Infections in Infants.—Alden says that the absorptive properties of the infantile middle ear are unquestionably greater than those of the adult. The fact that, in thirty-five cases of subperiosteal abscess in infants coming to operation, the majority of the cultures showed a staphylococcus or nonhemolytic streptococcus, while the cultures from the ears of thirty-two infants with the other form of the disease almost without exception contained a hemolytic streptococcus, would suggest that a certain bacterial specificity for each form of the disease may exist. If the pediatrician does not appreciate the intimate connection that often exists in the infant between obscure ear infection and gastro-intestinal disease, he will fail to call the otologist into consultation and the condition will go unrecognized. Proper recognition of the significance of this disease combination in the infant, and closer study by otologists of infections in the infantile ear, will in a few years result in the reduction of infant mortality.

Diagnosis of Sinus Thrombosis.—The fact that there is a difference in the number of bacteria in the blood of the right and of the left internal jugular vein, as obtained by puncture through the skin, Ottenberg says is an aid in the study of sinus thrombosis. The same principle can possibly be applied to certain other forms of infections; thus, for example, an osteomyelitis in the leg causing a blood stream invasion should give larger numbers of bacteria in the corresponding femoral vein than in other peripheral veins.

Archives of Physical Therapy, X-Ray, Radium, Omaha

8: 1-51 (Jan.) 1927

Newer Developments in Otolaryngologic Therapy. A. R. Hollender and M. H. Cottle, Chicago.—p. 1.
Industrial Physical Therapy. J. S. Coulter, Chicago.—p. 10.
Galvanism. J. U. Giesy, Salt Lake City.—p. 17.
Sine Currents. F. H. Morse, Boston.—p. 24.
Arthritis. W. S. Keyting, Salt Lake City.—p. 26.
Radium Therapy. A. F. Tyler, Omaha.—p. 30.

Arkansas Medical Society Journal, Little Rock

23: 129-149 (Jan.) 1927

Jaundice. O. C. Melson, Little Rock.—p. 129.
Treatment of Metallic Poisoning with Sodium Thiosulphate: Case: D. W. Goldstein, Fort Smith.—p. 133.

Boston Medical and Surgical Journal

196: 127-170 (Jan. 27) 1927

*Diabetic Surgery from Medical Point of View. E. P. Joslin, Boston.—p. 127.
Persistent Urethral Discharge: Relationship to Marriage. C. M. Whitney, Boston.—p. 136.
Unappreciated Value of Aspiration in Certain Common Suppurative Diseases. G. W. Haigh, Worcester.—p. 141.

Surgery in Diabetes.—Joslin stresses the point that cooperation is the keynote of surgery in diabetes. The surgeon leads and sets the pace, but close behind him in his work are the laboratories of chemistry, pathology, metabolism and roentgen ray; and still nearer the load, yoked together, are the nurses and physicians.

196: 171-210 (Feb. 3) 1927

*Analysis of One Thousand One Hundred Operations on Gallbladder. M. F. Fallon, Worcester, Mass.—p. 171.
Treatment of Chronic Bronchiectasis. W. Whittemode, Boston.—p. 182.
Chiropractor and Industrial Medicine. D. H. Gibson, Cambridge, Mass. p. 184.

Analysis of Gallbladder Operations.—Of 1,103 operations on the gallbladder and bile ducts, analyzed by Fallon, more than 90 per cent were for gallstones. In the first eight years, the mortality was 7.7 per cent; in 1922, it was 5.2 per cent; in 1923, 4.8 per cent; in 1924, 3.8 per cent, and in 1925, 1.9 per cent. This low mortality in 1925 was due to the cooperative effort both in the preliminary preparation of the patient, and in the operating room. The patients were not selected. In recent years the operation done has been, with very few exceptions, cholecystectomy.

Georgia Medical Association Journal, Atlanta

16: 1-39 (Jan.) 1927

Radium Treatment for Cancer of Cervix. O. D. Hall, Atlanta.—p. 1.
Endemic Typhus Fever. V. P. Sydenstricker, Augusta.—p. 6.
Unusual Manifestations of Malaria. L. M. Gaines, Atlanta.—p. 15.
Use of Sodium Cacodylate in Malaria. E. E. Murphey, Augusta.—p. 20.
Ulcerative Colitis. G. J. Dillard, Columbus.—p. 24.
Better Way of Making Mustard Paste. S. A. Visanska, Atlanta.—p. 26.
Vacuum Frontal Headaches. C. E. Ware, Atlanta.—p. 27.

Journal of Biological Chemistry, Baltimore

71: 235-558 (Jan.) 1927

Gasometric Micro-Kjeldahl Determination of Nitrogen. D. D. van Slyke, New York.—p. 235.
Comparative Metabolism of Certain Aromatic Acids: XI. Diphenylactic Acid. S. R. Miriam, J. T. Wolf and C. P. Sherwin, New York.—p. 249.
*Iron in Nutrition: III. Effects of Diet on Iron Content of Milk. C. A. Elvehjem, R. C. Herrin and E. B. Hart, Madison, Wis.—p. 255.
*Dietary Factors Influencing Calcium Assimilation: VIII. Calcium Level and Sunlight as Affecting Calcium Equilibrium in Milking Cows. E. B. Hart, H. Steenbock, H. Scott and G. C. Humphrey, Madison, Wis.—p. 263.
*Id.: IX. Influence of Cod Liver Oil on Calcium Assimilation in Lactating Animals. E. B. Hart, H. Steenbock, S. W. Kletzien and H. Scott, Madison, Wis.—p. 271.
*Changes in Inorganic Constituents of Blood in Suprarenalectomized Cats and Rabbits. E. J. Baumann and S. Kurland, New York.—p. 281.

Useful Compound of Histidine. H. B. Vickery, New York.—p. 303.
* Vitamin C Content of Cow's Ration and Its Milk. J. S. Hughes, J. B. Fitch, H. W. Cave and W. H. Riddell, Manhattan, Kan.—p. 309.
* Effects of Diets Rich in Protein or Inorganic Salts. T. B. Osborne, L. B. Mendel, E. A. Park and M. C. Winternitz, New Haven, Conn. —p. 317.
*Lipid Excretion: IV. Relationship of Bile to Fecal Lipids; Problems of Sterol Metabolism. W. M. Sperry, Rochester, N. Y.—p. 351.
Determination of Amount of Connective Tissue in Meat. H. H. Mitchell, R. L. Zimmerman and T. S. Hamilton, Urbana, Ill.—p. 379.
Distribution of Dihydrositosterol in Plant Fats. R. J. Anderson, F. P. Nabenhauer and R. L. Shriner, Geneva, N. Y.—p. 389.
Reduction Products of Certain Plant Sterols. R. J. Anderson and R. L. Shriner, Geneva, N. Y.—p. 401.
Properties of Cholesterol Obtained from Different Sources. R. J. Anderson, Geneva, N. Y.—p. 407.
Nature of Picrate Obtained from Normal Urine by Method of Findlay and Sharpe. F. D. White, Winnipeg, Can.—p. 419.
Protein Value in Nutrition of Beef Liver, Beef Heart and Beef Kidney. H. H. Mitchell and J. R. Beadles, Urbana, Ill.—p. 429.
Biochemical Study of Tooth Growth. Y. Matsuda, Philadelphia.—p. 437.
Phenol Tests: II. Nitrous Acid Tests; Millon and Similar Tests; Spectrophotometry. H. D. Gibbs, Washington, D. C.—p. 445.
Action of Ammonia on Prophylene Oxide. P. A. Levene and A. Walti, New York.—p. 461.
Configuration Relationship of Dextromethylethyl Carbinol to Dextrolactic Acid. P. A. Levene, A. Walti and H. L. Haller, New York.—p. 465.
Lactone Formation of Lacto- and Maltobionic Acids: Structure of Lactose and Maltose. P. A. Levene and Sobotka, New York.—p. 471.
Nutritive Value of Plastein. H. H. Beard, Cleveland.—p. 477.
Nature of Urine Sugars. H. S. Eagle, Baltimore.—p. 481.
Oxidation of 5-Amino-Uracil. O. Baudisch and D. Davidson, New York. —p. 497.
Catalytic Oxidation by Means of Complex Iron Salts. O. Baudisch and D. Davidson, New York.—p. 501.
Determination of Minute Amounts of Ethyl Iodide in Air, Water and Blood. I. Starr, Jr., and C. J. Gamble, Philadelphia.—p. 509.
Pseudomorphine. A. K. Balls, Philadelphia.—p. 537.
Separation and Estimation of Morphine, Pseudomorphine and Related Substances. A. K. Balls, Philadelphia.—p. 543.

Effect of Diet on Iron Content of Milk.—Evidence is presented by Elvehjem et al. that the iron content of milk is not increased by feeding large amounts of iron in the ration, or even by feeding green material such as cabbage in addition to the added iron. The percentage of iron in the milk seems to be an established amount for any specific animal and cannot be varied even by drastic changes in the iron content of its diet.

Dietary Factors Influencing Calcium Metabolism.—The results presented by Hart et al. indicate that equilibrium or a positive calcium balance can be secured by liberally milking cows receiving a ration of grains, grain by-products, corn silage and green grasses but only when that ration is supplemented with lime. The experimental animals received one-half pound (0.2 Kg.) of marl (calcium carbonate) daily. Since calcium equilibrium was established out of direct sunlight by the use of the higher level of calcium intake, these data do not contribute additional facts to the question of the influence of ultraviolet rays on the calcium and phosphorus metabolism of dairy cows.

Influence of Cod Liver Oil on Calcium Assimilation.—The nonsaponifiable fraction of cod liver oil fed by Hart et al. to lactating goats in capsules as a solid and pasty mass was not effective in improving calcium assimilation. When, however, this nonsaponifiable material was redissolved in corn oil and then administered, marked improvement in calcium assimilation resulted.

Effect of Suprarenalectomy on Blood.—In the experiments done by Baumann and Kurland, evidence did not point to an alkalosis as one of the consequences of suprarenalectomy. Suprarenalectomy does cause a fall in plasma sodium and chlorides. In the cat, a rise of plasma potassium, magnesium and, occasionally, calcium has been found. In a few other conditions in which suprarenal injury occurs, it has been found that a decrease in sodium and chloride content of plasma also occurs.

Relation Between Vitamin C in Food and in Milk.—The results obtained by Hughes et al. in a series of experiments indicate that the vitamin C content of a cow's ration has little if any influence on the vitamin C content of its milk.

Effect of Protein Rich Diets.—A renewed study of the possibilities of growth, in the albino rat, on diets exceptionally rich in protein has confirmed earlier observations made by Osborne and his associates on large increments of body weight at essentially normal rate and to adult size under such dietary conditions. The failure of some other investigators to secure equally good growth is ascribed, in the absence of more explicit information, to possible inadequacies of the rations employed in their feeding trials. In some of the successful experiments, the protein component of the dietary represented two thirds, or more, of the entire caloric intake.

Relationship of Bile to Fecal Lipids.—Because of the close similarity in composition of the excretions of normal and bile fistula dogs, the conclusion is drawn by Sperry that the bile is not the source of fecal lipids. Various applications of the results to problems of cholesterol metabolism are discussed.

Journal of Bacteriology, Baltimore

13: 1-71 (Jan.) 1927

Report on Twenty-Eighth Annual Meeting of Society of American Bacteriologists.—p. 1.

Journal of Bone and Joint Surgery, Boston

9: 1-216 (Jan.) 1927

*Operation for Stabilizing Paralytic Hips. F. D. Dickson, Kansas City, Mo.—p. 1.
*Acute Hematogenous Osteomyelitis. D. E. Robertson, Toronto.—p. 8.
Fixation Frame for Pott's Disease in Young Children. W. B. Carrell, Dallas, Texas.—p. 24.
End-Results of Coxa Plana. A. T. Legg, Boston.—p. 26.
*Blood Calcium and Phosphorus in Arthritis. I. W. Nachlas, Baltimore. —p. 37.
*Late Repair of Fractured Patella and Ruptured Ligamentum Patellae and Quadriceps Tendons. W. E. Gallie and A. B. LeMesurier, Toronto.—p. 47.
*Osteochondritis of Vertebral Body. J. Buchman, New York.—p. 55.
*Regeneration of Synovial Membrane Following Typical Synovectomy. W. E. Wolcott, Des Moines, Iowa.—p. 67.
*Congenital Malformation of Spine. C. W. Peabody, Detroit.—p. 79.
Plastic Flatfoot Operation. O. L. Miller, Charlotte, N. C.—p. 84.
Correction of Bowed Tibiae. R. I. Harris, Toronto.—p. 92.
*Rôle of Capsule in Joint Contractures: Subperiosteal Separation. D. Silver, Pittsburgh.—p. 96.
Traumatic Asphyxia: Four Cases. H. E. Conwell, Fairfield, Ala.—p. 106.
*Peculiar Behavior of Giant Cell Tumors. C. C. Chatterton and A. E. Flagstad, St. Paul.—p. 111.
*Underwater Gymnasium as Adjunct to Orthopedic Surgery. C. L. Lowman, Los Angeles.—p. 119.
*Operative Lengthening of Tibia and Fibula. L. C. Abbott, St. Louis. —p. 128.
*Blood Supply of Diaphysis. R. W. Johnson, Jr., Baltimore.—p. 153.

Operation for Stabilizing Paralytic Hips.—In these cases, Dickson transplants the origin of the tensor fasciae femoris from just external to the anterior superior spine to the vicinity of the posterior superior spine, in which position the pull of the muscle is almost in the same direction as that of the gluteus maximus and so should, in part, replace it. The muscle pull in its new direction acts to steady the pelvis on the head of the femur, thus to some extent replacing a weak or paralyzed gluteus medius. The result has been uniformly successful.

Acute Hematogenous Osteomyelitis.—Although staphylococcal infections come from skin lesions by contaminations of the blood, Robertson says that the primary bone lesion in the human is determined by trauma. Continued septicemia favors the formation of supplementary bone lesions. The bone lesion is in the metaphysis of a growing child. The chief symptom is pain; the chief sign, tenderness over the involved metaphysis. Treatment consists of early opening into the metaphysis for the purpose of drainage.

Blood Calcium and Phosphorus in Arthritis.—Nachlas has not been able to verify the observations of others that there is an abnormality of the calcium metabolism in arthritis deformans. He has not found any abnormality in the serum content of either the calcium-phosphorus, or the calcium-phosphorus product in arthritic patients as compared with normal adults. Furthermore, a reliable distinction is not offered by these analyses for the separation of rheumatoid arthritis from osteararthritis, the only difference noted consisting of a tendency of the phosphorus readings of the osteararthritic group to be lower than those of the rheumatoid

group. Finally, his observations would show that the activity of the disease, whether measured by the clinical symptoms or by the objective bony overgrowth, is not indicated by the results of these analyses.

Repair of Ruptured Patellar Ligament and Fractured Patella.—To reconstruct a ruptured ligamentum patellae, Gallie and LeMesurier pass two stout strips of Achilles tendon through drill holes in the patella above and the tibia below. Their ends are sutured by silk to hold them in place until they have become firmly healed to the tunnels in the bone. An ununited fracture of the patella near its lower margin may be repaired by approximating the fragments and holding them together by sutures of fascia lata, passing around the lower fragment and through drill-holes in the upper fragment. If the ununited fracture is near the lower margin, a long strip of Achilles tendon is passed around the lower fragment and through drill-holes in the upper fragment. The operation is completed by getting as intimate a contact as possible between the two ends of the tendinous transplant, passing one through the other and suturing them together by silk with considerable overlap. To repair a ruptured quadriceps tendon, three long sutures of fascia lata are used, each passing through a tunnel in the bone, with either end woven several times through the tendon. The security of the fixation to the tendon is increased by interweaving the stitches and by tying the ends in a triple knot, reenforced by a silk suture.

Osteochondritis of Vertebral Body.—Of the five cases reported by Buchman, three were mistaken for Pott's disease and treated as such, one was mistaken for congenital scoliosis, and only one was diagnosed as vertebral osteochondritis. All of the patients treated have done well under recumbency and plaster-of-paris jacket treatment. All of the patients treated have a remaining deformity which does not interfere with activity.

Regeneration of Synovial Membrane After Synovectomy.—Wolcott asserts that synovial membrane does degenerate after typical synovectomy. The regenerated pouch closely simulates the normal in size, contour, histologic structure and function. The newly formed pouch is the result of connective tissue metaplasia. Connective tissue metaplasia is progressive until about the fourth week, when the synovial membrane has been reformed. With this completed, the stimulus for new growth is removed and the fibroblastic cells mature into normal connective tissue. That there is an inhibition of progressive metaplasia after the new synovial membrane is formed explains the absence of excessive scar tissue formation as well as the permanence of restored function.

Congenital Malformation of Spine.—The developmental defects combined in the one spine reported on by Peabody include multiple rachischisis, sacralization of the fifth lumbar, fusion of adjoining centra, rudimentary centrum, unilateral defect of two posterior elements, including corresponding ribs, and peripheral fusion of ribs.

Subperiosteal Separation for Joint Contractures.—About five years ago, subperiosteal separation of the proximal dorsal attachment of the capsule of the metacarpophalangeal joint was performed by Silver subcutaneously for the relief of extension contractures of the four fingers. Since then, the method has been used for the relief of contractures of the fingers, metacarpophalangeal joints, the wrist, the elbow and the ankle, and, by the open method, of the knee. The method appears particularly suited to the relief of finger contractures. It is believed that this procedure will prove especially serviceable for the improvement of function in hands crippled by the various disease conditions classed under arthritis deformans. In the toes, the method can also be used in place of simple division of the capsule.

Malignant Changes in Giant Cell Tumors.—One of the cases reported by Chatterton and Flagstad suggests that occasionally true giant cell tumors do undergo malignant changes even when operative intervention and trauma have been mild. The second case illustrates the borderline aggressive type of giant cell tumor. Clinically and roentgenologically, this was more suggestive of a malignant condition than the first case. Microscopically, the tumor was benign. These cases, with others reported, suggest that at times difficulty and peculiarity are encountered in the diagnosis and behavior of giant cell tumors.

Underwater Gymnasium.—Lowman makes use of the outdoor pool in connection with muscle reeducation. The pool is not in any sense a swimming pool. The patients treated in it come by special appointment, on assigned days, at certain hours, and treatments are graded in dosage, limited in range and strength, as conditions indicate. The technicians are all graduates in physical education, and are competent to teach swimming when desired. Lowman has treated various types of cases in a pool specially equipped to handle orthopedic cases, notably poliomyelitis both recent and old, cerebral palsies—commonly classed as "spastics"—cases of congenital hip disease and posture cases.

Operative Lengthening of Tibia and Fibula.—In the six cases treated by Abbott, the lowest gain in length was 1¼ inches; the largest, 1⅞ inches. He describes his method of operating in detail.

Blood Supply of Diaphysis.—Experiments done by Johnson show that the nutrient vessels maintain viability throughout the medulla and supply the inner half of the cortex. Repair is active when the nutrient vessels alone are intact. The metaphyseal vessels maintain viability throughout the medulla and the inner half of the cortex, but repair is not as active as in the controls except close to the metaphyseal ends, being notably delayed in the middle region of the shaft. The periosteal system does not normally supply more than the outer half of the cortex, and is unable to afford an effectual collateral supply to the medulla of the diaphysis under four weeks' time. The periosteal repair is relatively poor in the healing of cortical defects. Regarding the shaft as a whole, the nutrient vessels are the most important, the metaphyseals next, and the periosteal system the least. In all conditions affecting the diaphysis, the blood supply is a most vital factor.

Journal of General Physiology, Baltimore

10: 359-467 (Jan. 20) 1927

Enzyme Action: XXXIX. Lipase Actions of Extracts of Whole Mouse at Different Ages. K. G. Falk and H. M. Noyes, New York.—p. 359.

Amphoteric Behavior of Complex Systems: III. Conductivity of Sulphanilic Acid-Lysin Mixtures. A. E. Stearn, Pasadena, Calif.—p. 369.

Id.: IV. Iso-Electric Point and Ionization Constants of Sulphanilic Acid. A. E. Stearn, Pasadena, Calif.—p. 379.

Oxidation-Reduction Potential of Luciferin-Oxyluciferin System. E. N. Harvey, Woods Hole, Mass.—p. 385.

Galvanotropism and "Reversal of Inhibition" by Strychnine. W. J. Crozier, Cambridge, Mass.—p. 395.

Phototropism in Young Rats. W. J. Crozier and G. Pincus, Cambridge, Mass.—p. 407.

Equilibration of Geotropic and Phototropic Excitations in Rat. W. J. Crozier and G. Pincus, Cambridge, Mass.—p. 419.

Certain Effects of Salts on Penetration of Brilliant Cresyl Blue Into Nitella. M. Irwin, New York.—p. 425.

*Peptic Hydrolysis of Egg Albumin. J. McFarlane, V. E. Dunbar, H. Borsook and H. Wasteneys, Toronto.—p. 437.

*Autodestruction of Pepsin in Relation to Its Ionization. A. M. Goulding, H. Borsook and H. Wasteneys, Toronto.—p. 451.

Peptic Hydrolysis of Egg Albumin.—Evidence is presented by McFarlane et al. showing that most of the products of the peptic hydrolysis of albumin, about 85 per cent of the total nitrogen, are primary, in the sense that they arise directly from the protein molecule, and do not undergo any further hydrolysis. A slow secondary hydrolysis, involving about 15 per cent of the total nitrogen, occurs in the proteose, and simpler fractions primarily split off. Acid metaprotein in peptic hydrolysis arises as a result of the action of acid. It is not an essential stage in the hydrolysis of undenatured albumin. Acid metaprotein is hydrolyzed by pepsin more slowly under comparable conditions than undenatured albumin.

Autodestruction of Pepsin.—Evidence is presented by Goulding et al. that pepsin is a univalent acid with a value for pK of 6.85 (or a base, with pK 7.39). The autodestruction of the pepsin is shown to be dependent in part on an instantaneous irreversible change occurring in the ionized form of the enzyme (if it be an acid) or in the unionized form (if it be a base). A further progressive autodestruction of pepsin at any given hydrogen ion concentration and temperature

is defined by the mass law equation for a monomolecular reaction. The velocity of autodestruction of pepsin is directly proportional to the hydroxyl ion concentration. It is much less in the range of hydroxyl ion concentration from pOH 9.89 to 7.7, than in the range greater than pOH 7.7. In both these ranges, variations in pK with pOH may be represented by straight lines.

Journal of Immunology, Baltimore

13: 1-78 (Jan.) 1927

*Anaphylactic Shock and Mechanical Obstruction of Hepatic Veins in Dog. J. P. Simonds and W. W. Brandes, Chicago.—p. 1.

Effect of Obstruction of Hepatic Veins on Outflow of Lymph From Thoracic Duct. J. P. Simonds and W. W. Brandes, Chicago.—p. 11.

*Toxins of Hemolytic Streptococci. M. B. Kirkbride and M. W. Wheeler, Albany, N. Y.—p. 19.

Production of Staphylococcus Antitoxin in Horses. J. T. Parker and E. J. Banzhaf, New York.—p. 25.

*What Conclusions Can Be Drawn from Different Degrees of Dick Skin Test Reactions? B. Johan, Budapest, Hungary.—p. 31.

*Blood Groups of Laps in Sweden. T. Rietz, Vestervik, Sweden.—p. 37.

Allergic Reactions to Streptococcus Antigens. G. M. Mackenzie and F. M. Hanger, Jr., New York.—p. 41.

*Relation of Anaphylaxis to Immunity: I. Passive Desensitization in Dogs. W. H. Manwaring and others, San Francisco.—p. 59.

*Id.: II. Phenomenon of Antianaphylatoxic Immunity. W. H. Manwaring and others, San Francisco.—p. 63.

Reactions of Urinary Bladder in Rabbit Anaphylaxis. W. H. Manwaring and H. D. Marino, San Francisco.—p. 69.

*Hypersensitiveness: XXIV. Identity of Atopens of Pollens of High Ragweed and Low Ragweed. Aaron Brown, New York.—p. 73.

Effect of Mechanical Obstruction of Hepatic Veins.—Simonds and Brandes state that simple mechanical obstruction of the hepatic veins in otherwise normal dogs increases the outflow of lymph from the thoracic duct from 2.4 to 6.2 times, with an average increase of 5.2 times, the normal. This increase in the outflow of lymph is almost identical with the average increase (5.45 times) observed by Petersen, Jaffé, Levinsos and Hughes in anaphylactic shock, but was much less than that recorded by them in peptone shock.

Toxins of Hemolytic Streptococci.—Although Kirkbride and Wheeler admit it may be possible to distinguish a specific group of scarlet fever streptococci, they state that up to the present time, in toxin neutralization tests with a serum produced with the Dochez scarlet fever strain, they have not found any fundamental differences in the strains isolated from typical cases of scarlet fever and in those isolated from many other infections.

Reading Results of Dick Skin Tests.—Johan insists that, when reading results of Dick skin tests, it is not enough to classify them only as positive or negative reactions. Differences in degrees of positive reactions must also be noted. There is not a sharp dividing line between positive and negative reactions; there are borderline reactions. The interpretation of these often depends on the physician who reads the reaction. When these borderline reactions are numerous, a larger possibility of error is introduced.

Blood Groups Among Laps in Sweden.—An investigation made by Rietz of the blood groups among Swedish Laps shows a proportion of 51 per cent in group I; 42 per cent in group II; 3 per cent in group III, and 4 per cent in group IV. The proportion between groups I, II and III differs from hitherto examined peoples, and the examination of the blood is not in accord with observations in Mongolian races.

Relation of Anaphylaxis to Immunity.—Manwaring et al. present evidence that in dogs the sensitizing antibody and desensitizing antibody are of different chemical composition, and that neither of these substances is identical with the specific precipitin of test tube reactions.

Phenomenon of Antianaphylatoxic Immunity.—Manwaring et al. state that tissues of actively immunized dogs transplanted by blood vessel anastomosis into hypersensitive recipients show a complete acquired insusceptibility to the hepatic anaphylatoxin. The hepatic anaphylatoxin, therefore, must be regarded as a secondary antigen, presumably of protein nature, and conceivably a denaturization product of the primary antigen. The antianaphylatoxic immunity factor is apparently not transferred from one animal to another by even massive immune blood transfusion.

Hypersensitiveness in Hay-Fever.—Thirty-one late hay-fever subjects were tested by Brown with extracts of high and low ragweed pollens, and each one was found to be equally sensitive to the two extracts. One group of these persons was given the usual series of prophylactic injections of one of the extracts, and the remainder were similarly treated with the other extract. After a maximal tolerance had been established to the one extract, an equivalent or larger quantity of the other extract was injected. This change from one extract to the other was not followed in any case by a constitutional reaction, which must have been expected if the atopen of the two pollens was not identical.

Laryngoscope, St. Louis

37: 1-78 (Jan.) 1927

Inflammation of Nasal Accessory Sinuses. O. Hirsch, Vienna.—p. 1.

Sinusitis. J. I. Klepper, New York.—p. 10.

Dowling Treatment in Ear, Nose and Throat Diseases. S. Knopf, New York.—p. 17.

Relation of Paranasal Sinus Disease to Systemic Conditions in Infants and Young Children. A. J. Cone, Iowa City.—p. 19.

Gradenigo Syndrome: Cases. W. H. Sears, Huntingdon, Pa.—p. 32.

Fulminating Mastoiditis. H. Hays, New York.—p. 45.

Primary Jugular Bulb Thrombosis with Numerous Metastatic Infections. H. S. Wieder and W. Bates, Philadelphia.—p. 48.

Thrombosis of Lateral Sinus, with Erosion of Overlying Bone. E. M. Seydell, Wichita, Kan.—p. 52.

Bacteriology of Acute Ears. V. K. Hart, Statesville, N. C.—p. 56.

Three Unusual Endoscopic Cases. J. D. Kernan, New York.—p. 62.

Maine Medical Association Journal, Portland

18: 1-19 (Jan.) 1927

Treatment of Toxemia of Pregnancy. A. P. Leighton, Jr., Portland.—p. 1.

Diabetic Neuritis. E. R. Blaisdell, Portland.—p. 10.

Military Surgeon, Washington, D. C.

60: 1-121 (Jan.) 1927

Respiratory Group of Diseases as They Affect Soldiers and Sailors. M. W. Hall.—p. 1.

Medical Department of Chinese Armies. C. M. Oman.—p. 31.

Pneumonia. C. S. Cole.—p. 37.

Army Regulations and Reserve. W. P. Morrill.—p. 42.

History of Laboratories of Army Medical School. H. J. Nichols.—p. 52.

Industrial Accidents in Arsenals of Italian Navy. G. L. Rolando.—p. 65.

National Defense and Army Medical Officer. D. C. Hilton.—p. 69.

Recollections of Some Old Medical Officers. H. C. Yarrow.—p. 73.

Nebraska State Medical Journal, Norfolk

12: 41-80 (Feb.) 1927

Treatment of Acute Cardiac Tragedies. A. C. Morgan, Philadelphia.—p. 41.

Care of Prostatic Hypertrophy, From Physician's Standpoint. E. Davis, Omaha.—p. 47.

Angioneurotic Edema. A. R. Kintner, Nehawka.—p. 50.

*Serum Treatment of Meningococcic Meningitis by Combined Cistern and Lumbar Injections. A. E. Bennett and E. E. Simmons, Omaha.—p. 54.

Newer Aspects of Nutrition: Pathology of Malnutrition. V. E. Levine, Omaha.—p. 57.

Clinicopathologic Conference. A. D. Dunn and A. J. Miller, Omaha.—p. 63.

Carcinoma of Stomach: Its Surgical Treatment. Splenic Anemia: Its Surgical Treatment. L. D. McGuire, Omaha.—p. 67.

Thrombosis of Cavernous Sinus. W. Nolan, Omaha.—p. 68.

Serum Treatment of Meningococcic Meningitis.—Two sporadic cases of meningococcic meningitis treated by alternate intracisternal and intraspinal injections of antimeningococcic serum are reported by Bennett and Simmons. Both patients were in the second week of the disease. In one case a definite clinical and serologic improvement occurred from serum therapy; but complications of spinal subarachnoid block and associated generalized miliary tuberculosis resulted in death. In the other case, the patient being in an extremely critical condition, vigorous serum therapy resulted in recovery in a case in which, ordinarily, a fatal issue would have resulted. On the bases of these cases and recent results reported by others, a plea for early administration of serum, using particularly the intracisternal route of injection, is made, in the hope of reducing the high present rate of mortality and morbidity. In well advanced cases in which spinal subarachnoid block is present, the cisternal injections offer the only hope of cure.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 87-124 (Jan. 15) 1927

Changes in Clinical Aspects of Disease. H. Rolleston.—p. 87.
Story of Thyroid. J. Lynn-Thomas.—p. 91.
*Goiter Prevention. R. McCarrison.—p. 94.
Carcinoma of Colon. R. P. Rowlands.—p. 95.
*Tomb Essential Oil Treatment of Cholera. A. Cannon.—p. 98.
Trauma and Sarcoma. H. B. L. Levy.—p. 98.
Herpes Zoster at Fourteen Months. I. H. McCaw.—p. 99.
Acute Yellow Atrophy of Liver. T. J. Evans.—p. 99.
Sciatica: Pott's Disease. J. O'Conor.—p. 99.

Goiter Prevention.—McCarrison gives additional evidence bearing on the importance of providing a chemically and bacteriologically pure water supply if goiter is to be eradicated. Iodine, he says, has nothing to do with the matter. Goiter, which had been endemic in Sanawar for seventy years, has now disappeared; and its disappearance has been due to the introduction of a new and protected water supply. Its eradication within the short space of three years is, McCarrison says, unparalleled in the history of goiter prophylaxis.

Tomb Treatment of Cholera.—Cannon avers that he has bacteriologic proof that the Tomb mixture can also clear up a case of typhoid within twenty-four hours, and that this treatment could without doubt also be used in some kinds of intestinal toxemia and in certain influenzal and rheumatic conditions. There does not seem to be any question that as a preventive and cure for cholera it is very efficient.

Journal of Tropical Medicine and Hygiene, London

30: 1-16 (Jan. 1) 1927

*Parasites in Therapeutic Malaria. G. de M. Rudolf and J. C. Ramsay.—p. 1.
*Macroglossia Mycotica. Pereira, Jr.—p. 8.

Parasites in Therapeutic Malaria.—Parasites enumerated by Rudolf and Ramsay working independently were found to vary considerably in numbers in the peripheral blood stream during the course of malaria in patients with general paralysis. In thirteen out of fourteen cases, a decrease in the number occurred between the stages of sporulating and half-grown forms, and in ten out of the fourteen an increase in number took place as the parasites grew from young rings to older intracorpuscular forms. The decrease and the increase were not constantly present in each patient. As development proceeded from half-grown to ring forms, a decrease occurred in 97.9 per cent of instances and an increase in 2.1 per cent. As development proceeded from ring to half-grown forms a decrease in numbers occurred in only 24.8 per cent and an increase in 60.9 per cent, and neither in 14.3 per cent of instances. The decrease in numbers as the parasites pass from three-fourths grown forms, and as they sporulate and become small rings, corresponds with the general biologic law that when the mortality is high, large numbers of eggs or young organisms are produced. The number of merozoites from each schizont is comparatively large, and so a high death rate would be expected. In four patients the parasites remained very scanty during the first few days, to increase suddenly later. In five out of ten patients, a relationship was found between the numbers of parasites and the degree of fever. In these five cases, the same number of parasites was not accompanied by the same degree of fever in different patients; but as the temperature became greater the parasites increased, and decreased as the rises of temperature became smaller.

Monilia Aldoi in Macroglossia.—From this case Pereira obtained in pure culture a new strain of monilia for which he proposes the name *Monilia aldoi* in honor of Aldo Castellani. The patient was a flutist. The duration of the disease was twelve years.

Lancet, London

1: 61-110 (Jan. 8) 1927

*Adaptability in Disease. G. R. Murray.—p. 61.
*Clinical Occurrence of Sino-Auricular Block. P. Barlow.—p. 65.
*Gastric Secretion in Exophthalmic Goiter. H. Moll and R. A. M. Scott.—p. 68.
*Development of Fibrosarcoma After Injection of Arsphenamine. H. F. Harbitz.—p. 70.
Titration of Scarlet Fever Antitoxin in Rabbits. C. C. Okell.—p. 71.
*Pulmonary Tuberculosis: Prevention. W. B. Vaile.—p. 72.
*Pellagra in Nyasaland. H. M. Shelley.—p. 74.
*Hernia Through Transverse Mesocolon. S. T. Irwin.—p. 75.
Case of Branchial Cyst. J. W. Thomson.—p. 76.
*Acute Leukemia Complicated by Syphilis. A. J. Hawe and F. S. Paterson.—p. 76.

Adaptability in Disease.—Adaptability, which is a common property of all forms of life, Murray says, is a very important factor in man in both health and disease. In disease, and especially in chronic disease, due allowance must be made for this capacity in framing a prognosis. A practical experience of what the victim of a chronic malady can do by conscious and unconscious adaptation is of great value, not only in encouraging him to make the best of his life but also in giving suitable advice as to how this may best be accomplished. Therefore, Murray makes a plea for a fuller study of every case of chronic disease so as to estimate the patient's remaining powers and possibilities as accurately as possible. When his capabilities have been gaged, it may be possible in many cases so to order life that it becomes far more useful and enjoyable than before. In this way, many a patient may be saved from drifting into an existence that is clouded by unnecessary pessimism.

Sino-Auricular Block.—Four cases of sino-auricular block are described by Barlow, and a tabular summary of published cases since 1916 is furnished. It is a rare cause of intermission of the pulse, in which a whole heart beat fails to appear, and it is recognizable only by graphic methods. Atropine usually abolishes the block temporarily. Pressure on the bulbus oculi and also on the vagus has varied effects. Etiologically, not any one factor is responsible, though many cases are definitely due to digitalis administration. Other suggested causes are the use of tobacco, salicylates and infective conditions. There are not any characteristic symptoms in association, and the disease does not produce any. The condition may be present without any symptoms or signs of cardiovascular disease, but it is often accompanied by slight grades of auriculoventricular block or other signs that indicate associated myocardial disease.

Gastric Secretion in Exophthalmic Goiter.—Rehfuss tests were made by Moll and Scott in fifty cases of hyperthyroidism. Of these, twenty-two showed achlorhydria, fifteen hypochlorhydria, and thirteen normal or high normal chlorhydria. The average duration of symptoms in achlorhydric cases was 2.9 years, in hypochlorhydric cases 1.1 years, in cases with normal secretion half a year. This suggests that the diminution of hydrochloric acid secretion occurs in the course of the disease and is not a predisposing cause. Sixty per cent of the cases of achlorhydria were due to duodenal regurgitation.

Fibrosarcoma on Site of Arsphenamine Injection.—Harbitz reports a case of fibrosarcoma of the left interscapular region in which the tumor developed on the site of the injection of arsphenamine fifteen years previously. There were small quantities of arsenic in the tumor.

Eating Fat Prevents Pulmonary Tuberculosis.—Vaile finds a relationship between abstaining from eating fat and contracting tuberculosis. He asserts that fat eaters rarely have tuberculosis; therefore his method of prevention of the disease consists of advising mothers to insist on every one in the family eating fat and to give them suet liberally and frequently. He says that further cases of tuberculosis have not occurred in any home in which this has been done.

Pellagra an Infection.—Shelley regards pellagra as being an infection with some parasite or micro-organism. Formation of a toxin produces (*a*) changes in the thyroid; (*b*) anemia; (*c*) changes in the nervous system leading to peripheral neuritis, melancholia; (*d*) achlorhydria, and (*e*) nephritis. There is in pellagra: (1) a deficiency in thyroid secretion; (2) a neuritis of certain nerves in preference to others, and (3) skin lesions corresponding to the cutaneous distribution of those nerves. The administration of thyroid gland tablets, 2 grains (0.13 Gm.) daily, produced a rapid improvement in

the pellagrins treated by Shelley, some of whom had very severe skin lesions. There was a complete disappearance of the skin trouble in a few days (average from about ten to fifteen days), and the patients felt physically improved and seemed mentally improved. Of more than 100 patients with pellagra treated by this method in 1924, only eight had any recurrence of the condition during 1925. The administration of dilute hydrochloric acid, in 5 minim (0.3 cc.) doses, three times daily, was futile. Arsenical mixtures did not produce any alteration of the condition. The thyroid treatment has been adopted as a routine.

Hernia Through Transverse Mesocolon.—Irwin reports a case of hernia of the whole small intestine through the transverse mesocolon, following gastro-enterostomy.

Associated Leukemia and Syphilis.—In the case reported by Hawe and Paterson, there was an association of lymphatic leukemia with recently acquired syphilis, and a rapidly fatal exacerbation of symptoms after treatment with arsenic intravenously. The diagnosis, which was made some hours before the patient's death, was verified by postmortem examination. The onset of all the severe terminal symptoms after the injection of arsphenamine from one lot, the authors feel, indicates that the drug caused the fatal exacerbation and precipitated death.

Tubercle, London

8: 153-196 (Jan.) 1927

*Diagnosis and Prevention of Tuberculosis as Functions of Tuberculosis Dispensary. G. L. Cox.—p. 153.
*Value of Roentgen-Ray Work at Tuberculosis Dispensary. J. L. Stewart. —p. 157.
*Treatment of Tuberculosis with Small Doses of Metal Salts ad Modum Wallbum. N. Lunde.—p. 165.

Function of Tuberculosis Dispensary.—In the campaign against tuberculosis, in the prevention of disease, Cox says, the work of a highly trained and efficient tuberculosis nurse is of the greatest value. In Lancaster County there are 121 urban and rural sanitary districts, and the patients with tuberculosis are visited by a staff of thirty whole-time tuberculosis health visitors working from one of the tuberculosis dispensaries. In the notified cases the tuberculosis health visitor pays a primary visit in each sanitary area. Her reports on the environmental conditions are considered by the tuberculosis officer and a duplicate is sent at once to the local medical officer of health, whose attention is drawn to any sanitary defect or defects that may exist. By this mutual cooperation prompt and regular visits can be made, and overlapping as regards visiting by officials of two public authorities is avoided. This phase of the tuberculosis work, particularly the cooperation with the local health officials, could not be done, in Cox's opinion, as efficiently by health visitors devoting only a part of their time to tuberculosis work. He is convinced that as a result of all this work tuberculosis is declining.

Value of Roentgenotherapy in Tuberculosis Dispensary.—From fourteen years' experience—nine without and five years with a roentgen-ray apparatus—Stewart has come to the conclusion that roentgen-ray examination is an invaluable aid in the work of a tuberculosis dispensary, both in the diagnosis of the disease and in furnishing clinical information in many cases, which will prove of value and interest to the tuberculosis officer.

Treatment of Tuberculosis with Metal Salts—The significance of calcium salts in enzymatic processes has been well known for a long time. After the results obtained by extensive and systematic biologic experiments, Lunde says there cannot be any doubt that a great number of other metallic salts administered in small doses produce definite demonstrable therapeutic effects of different kinds. Based on experimental biologic tests, the administration of excessive doses entails three risks: (1) metal poisoning; (2) stimulation of the growth of bacilli, and (3) suppression of the production of antibodies and similar salutary processes. If a number of tuberculous guinea-pigs are treated with an active metal, it will be found that animals receiving comparatively large doses soon die of tuberculosis, and that the metallic salt in the strength used in these cases, calculated per unit of weight, stimulates the growth of the bacilli.

Acta Dermatologica, Kyoto, Japan

8: 483-626 (Oct.) 1926

Precipitin and Specific Cutireaction: VI. Precipitin in Tissue Presenting Specific Cutireaction (Arthus Phenomenon). G. Shoji.—p. 497.
Examination of Tuberculous Kidney. Y. Niijima.—p. 505.
Statistics on Gonorrhea. S. Kobayashi and T. Yokoyama.—p. 524.
*Spirochetes in Spinal Fluid of Syphilitics. Y. Ikegami.—p. 535.
Experimental Investigations on Arsphenamine. S. Takenaka, S. Watanabe and M. Abe.—p. 559.
Photodynamic Action of Dyes on Ciliated Epithelium. S. Ishikawa and T. Umeda.—p. 574.
Scrotal and Testicular Changes in Rabbits Due to Inoculation with Spirochaeta Icterohaemorrhagiae (of Rat). M. Abe.—p. 594.
*Prophylaxis Against Experimental Rat-Bite Fever in Rabbits. K. Fujita. —p. 606.
Species of Nitrifying Bacterium. K. Fujita.—p. 609.
Case of So-Called Porokeratosis Mibelli of Tongue, Glans, Penis and Mucous Surface of Prepuce. A. Fukai.—p. 619.

Spirochetes in Spinal Fluid in Syphilis.—Ikegami examined the cerebrospinal fluid of seventy-seven syphilitic patients at various stages of the disease for spirochetes but failed to find any in the whole series of cases, although in a few cases particles were found that were suggestive of disintegrated spirochetes.

Prophylaxis Against Experimental Rat-Bite Fever.—Fujita inoculated rabbits in the scrotal wound with mouse blood containing the spirochete. At varying intervals thereafter he applied to the wound 33 per cent calomel petrolatum and 40 per cent quinine petrolatum. The former was entirely without effect. The quinine petrolatum, applied five and ten minutes after inoculation, protected two of three animals against the disease; applied after fifteen minutes, one of three rabbits was immunized.

Archiv für Japanische Chirurgie, Kyoto, Japan

4: 1-207 (Jan. 1) 1927

Congenital Diaphragmatic Hernia. Y. Iwama.—p. 1.
Changes in Blood Vessels Caused by Injection of Epinephrine: (1) Following Operations on Sympathetic Nervous System and Sympathectomy Injection. Y. Terauchi.—p. 10.
Id.: II. Following Sympathectomy and Combined Periarterial Sympathectomy. Y. Terauchi.—p. 33.
Ligation of Hepatic Artery: I. Y. Hori.—p. 51.
*Acute Proctitis with Swelling of Anterior Wall of Rectum After Operation for Acute Appendicitis. Y. Hori.—p. 67.
*Causes of Osgood-Schlatter's Disease. T. Shakuto.—p. 75.
Four Cases of Carcinoma: Carcinoma of Jejunum of Intestine. H. Murogetsu.—p. 103.
Effect of Various Experimental Nerve Injuries on Testis, Especially Lumbosacral Sympathectomy. Y. Terauchi.—p. 121.

Acute Proctitis Following Appendectomy.—Hori has noted this complication in cases of appendectomy in which the appendix had ruptured. The symptoms of proctitis did not appear until the tenth day—when the patient apparently had wholly recovered from the operation. The treatment consisted in the application of cold.

Causes of Osgood-Schlatter's Disease.—Shakuto favors the traumatic theory of causation of this disease. Among eighty cases seen by him, there was a history of direct or indirect trauma in nineteen, and in twenty other cases examination by roentgen ray and the conditions found at operation pointed to such an etiology.

Okayama Medical Journal, Okayama, Japan

443: 1293-1399 (Dec.) 1926

Physiology of Thyroid and Parathyroid: IV. Influence on Animal Tissue Metabolism. Y. Takahasi.—p. 1293.
Investigation of Bile Acids: II. Bacterial Fermentation of Glycerin in Presence of Desoxybile Acid, Especially by Bacillus Subtilis. K. Kaziro.—p. 1303.
Spleen and Carbohydrate Metabolism: VI. Influence of India Ink or Toluylendiamin on Blood Sugar Curve with Glucose or Epinephrine Applications. A. Noma.—p. 1321.
Idiopathic Cysts of Common Duct. M. Sato.—p. 1348.
Encephalitis Following Vaccination with Virus of Herpes Simplex and Herpes Zoster. I. Ehara.—p. 1359.
Function of Thyroid in Ankylostomiasis. Y. Tsunashima.—p. 1376.
Action of Fixation Agents. F. Bito.—p. 1386.

Annales de l'Institut Pasteur, Paris

40: 893-971 (Nov.) 1926

*Rôle of Conditional Reflexes in Immunity. S. Metalnikov and V. Chorine.—p. 893.
Relation of Drosophila Flies to the Micro-Organisms of the Grape. E. Sergent and H. Rougebief.—p. 901.
*Malignant Tumors in the Anamese of Cochin-China. J. Bablet.—p. 922.
Quinquivalent Arsenic in Treatment of Trypanosomiasis. E. Fourneau et al.—p. 933.
*Changes in the Thymus and Thyroid in Endemic Goiter. F. M. Messerli and E. Coulaud.—p. 952.

Rôle of Conditional Reflexes in Immunity.—Metalnikov and Chorine's experiments consisted in the following: Twenty-four guinea-pigs were injected daily in the peritoneum with tapioca, *Bacillus anthracoides* or staphylococcus filtrates. During the injection an area of the skin was scratched, or a heated metallic plate was applied to it. The site of the external irritation was the same at each injection. From fifteen to twenty injections and irritations were given to each animal. Twelve or fifteen days after the last treatment, when the peritoneal exudate should, supposedly, have returned to normal, the irritation of the skin was repeated several times in one day. Nothing was injected into the peritoneum. The peritoneal exudate was then examined. The leukocyte pictures of the exudate were analogous to those induced by injection of a foreign substance into the peritoneum. The number of polymorphonuclears increased first, then that of monocytes and finally that of lymphocytes. Another series of animals was treated in the same manner, except that, the day after the irritation that followed the twelve or fifteen days' rest, a lethal dose of cholera vibrios was injected. The animals survived, while the controls died. Evidently, in animals with induced conditional reflexes, external irritation may be the origin of reactions of immunity against a fatal infection. Kryloff demonstrated the connection of conditional reflexes with phenomena of poisoning. In dogs treated with injections of morphine, characteristic signs of the poisoning occurred when mere physiologic sodium chloride solution was injected, or at sight of the syringe, or on appearance of the experimenter. The author is inclined to believe that conditional reflexes may be involved not only in phenomena of immunity but also in many chronic and nervous diseases. They may be responsible for attacks and paroxysms in asthma, cardiac disorders, neuroses, etc. Suppression of conditional reflexes, by changing the corresponding external conditions in the patient's environment, may prove salutary.

Malignant Tumors in the Anamese of Cochin-China.—Bablet's study was made in Cochin-China on 178 natives affected with carcinoma or sarcoma. The proportion of malignant tumors to the general morbidity is 1 to 100. The histologic types of the tumors do not differ from those in temperate zone countries. The mouth, neck and external genital organs are regions of election. The percentage of cancer of the digestive tube is low, though intestinal parasitism is of frequent occurrence in that country. The age of the patients ranged from 30 to 55; the two sexes were equally involved. In 30 per cent, malignant tumor coincided with syphilis; in 18 per cent, with tuberculosis. The latter was mostly associated with sarcoma of the cervical glands. Coexistence of the three diseases was observed in five patients.

Comparative Study of Thymus and Thyroid in Countries With and Without Endemic Goiter.—Messerli and Coulaud's research was conducted on rats. In Paris, where endemic goiter does not exist, the size of the animals' thyroid was half that of rats in Strasbourg and Lausanne, where a few cases of endemic goiter are observed. In Zurich, where endemic goiter is frequent, the thyroid of the animals was three or four times as large as that of rats in Paris. In all instances, the volume of the thymus paralleled that of the thyroid. This accords with Wagner von Jauregg's report that thymus extracts associated with thyroid extracts are effectual in preventive treatment of endemic goiter and of cretinism. It is probable that in countries with endemic goiter the thymus persists longer in man.

Bruxelles-Médical, Brussels

7: 37-70 (Nov. 7) 1926

*Pathogenesis of Arterial Hypertension. R. Verhoogen.—p. 37.
International Organization of Health Service. R. Sand.—p. 48.
"Sanocrysin" in Treatment of Lupus. A. Peyri.—p. 54.
Case of Monstrosity. J. Beerens.—p. 60.

Pathogenesis of Arterial Hypertension.—Verhoogen emphasizes the characteristic features of essential or primary hypertension. It is a pathologic entity, though the pathogenesis is not yet definitely established. Sometimes it is discovered only incidentally or revealed merely by subjective symptoms. There may be found nothing abnormal on analysis of the urine or on testing the kidney function. The content of urea in the blood may remain unchanged. Most frequently essential hypertension develops into nephritis. Some of the patients die from renal insufficiency, others from cardiac insufficiency or cerebral hemorrhage. Heredity appears to be an important etiologic factor. Infection, lead poisoning, alcohol and tobacco, also intestinal intoxication and disequilibrium of the nervous system, have been in turn incriminated. In essential hypertension with normal elimination of nitrogen, restriction of protein in the diet is harmful rather than otherwise. An excess of carbohydrates or fats is contraindicated, in order to avoid obesity. The results of a chloride-free diet are so far uncertain.

Médecine, Paris

8: 85-160 (Nov.) 1926

Syphilography, Venerology and Dermatology in 1925-1926. H. Gougerot. —p. 85.
Review of Lichenification. L. Brocq.—p. 87.
Treatment of Ulcer of the Leg. E. Jeanselme and A. Fouet.—p. 94.
*Treatment of Intertrigo. R. Sabouraud.—p. 103.
*Zinc Chloride in Treatment of Tuberculous Ulcerations. J. Nicolas and M. Pillon.—p. 110.
Operation Plus Light in Treatment of Lupus. Louste.—p. 116.
Treatment of Erysipelas. L. Dekeyser.—p. 121.
*Treatment of Bullous Dermatoses. L. Spillmann and J. Watrin.—p. 124.
Complications of Impetigo in Children. R. Debré and M. Lelong.—p. 128.
Absence of Xiphoid Process and Congenital Syphilis. L. Queyrat.—p. 135.
Syphilitic and Rheumatic Sciaticas. J. A. Sicard.—p. 139.
Acute Myopia from Neoarsphenamine. Milian and Périn.—p. 144.
Erythrodermias from Bismuth. L. Lortat-Jacob and J. Roberti.—p. 147.
Curability of Syphilis. C. Simon.—p. 151.
Cure of Gonorrhea in Men and Women. Roucayrol.—p. 155.

Iodized Alcohol in the Treatment of Intertrigo.—Sabouraud employed his method in inflammatory lesions with itching, located chiefly in folds of the skin: anal or vulvar pruritus, microbic or mycotic intertrigo, and oidiomycoses. A wad of cotton held by hemostatic forceps is soaked in alcoholic solution of iodine (1:100) and the affected area is rubbed vigorously with it. The scales should be previously removed. The burning occasioned lasts only a minute. After the rubbing an ointment is applied. If the skin lesions are of streptococcus origin, the following ointment is used: stovaine, calomel and tannin, 0.3 Gm. each, are mixed with 30 Gm. of petrolatum. The treatment is repeated daily. If the lesions are of mycotic origin, an ointment is used composed of benzoic acid and zinc oxide, 1 Gm. each, in 30 Gm. of petrolatum. For a stronger effect, 3 Gm. of benzoic acid are mixed with 3 Gm. of salicylic acid and 30 Gm. of petrolatum. In Sabouraud's cases the itching subsided on the first application. Mycotic lesions on the palm of the hand and sole of the foot are liable to recur after apparent healing.

Zinc Chloride in Treatment of Tuberculous Ulcerations.—Nicolas and Pillon obtained excellent results from the application of zinc chloride to tuberculous ulcerations. In a case of a large tuberculous ulceration around the anus, the intolerable pain vanished after one application; the ulceration was definitely healed after five applications. A favorable effect was noted in lupous ulcerations situated in one instance on the nasal mucosa, in another on the skin. Healing was obtained in two cases of lupus of the face. The solution used is composed of 3 Gm. of zinc chloride and alcohol (80 per cent) to make 10 cc. Each application of the zinc is followed by an application of tincture of iodine. The treatment is repeated every three weeks. In the intervals, applications of tincture of iodine are made daily.

Vasoconstrictive Substances in Treatment of Pemphigus and Bullous Dermatoses in General.—Spillmann and Watrin describe two cases in which the results of the treatment were surprisingly good, after all other measures had failed. In one patient bullae with a tendency to bleed were present over the entire body. The first day, 10 cc. of a 5 per cent solution of Witte's peptone was given subcutaneously, and 40 drops of a 0.1 per cent solution of epinephrine by the mouth. The next day the patient ingested 0.2 Gm. of ergotin and 0.001 Gm. of epinephrine. The third day, 5 cc. of a 10 per cent solution of calcium chloride was given intravenously. The treatment was continued in this manner and the patient was discharged after two months. A month later he was able to resume his usual work. On examination made twenty-two months later his condition was excellent. From time to time, small bullae appeared on the hands and the feet, but without causing any discomfort. A similar effect was observed in a case of pemphigus without hemorrhagic tendency. The evolution of the lesions was arrested within six weeks. Cutaneous bullae are the result of increased lymphatic secretion associated with endothelial alteration in the capillaries of the skin. This explains the therapeutic efficiency of vasoconstrictive substances.

Paris Médical

63: 37-52 (Jan. 8) 1927

Practice of Intradermal Inoculations. L. Goldenberg and L. Panisset.—p. 37.
Recklinghausen's Disease with Hypertrophy of Limb. M. Dechaume.—p. 43.
*Action of Theobromine on Secretion of Cerebrospinal Fluid. R. Targowla and A. Lamache.—p. 46.
Tuberculosis of Clavicle and of Urinary Tract. L. Ménard.—p. 48.

63: 85-100 (Jan. 22) 1927. Partial Index

Gold Treatment in Psoriasis. G. Hufschmitt.—p. 91.
Border's Method of Treating Anterior Poliomyelitis. G. Chizzola.—p. 93.
Causes of Rhizomelic Spondylosis. H. Jausion.—p. 95.

Action of Theobromine on Secretion of Cerebrospinal Fluid.—Nine women with mental diseases were given 1 Gm. of theobromine daily. In one case the tension of the cerebrospinal fluid rose from 16 to 26 cm. of water in eleven days. In another case theobromine administered on eight successive days raised the tension 12 cm. Theobromine was given to a patient after 10 cc. of the cerebrospinal fluid had been withdrawn. The pressure of the fluid, which dropped 8 cm. after the puncture, rose 11 cm. three days later, under the influence of 4.5 Gm. of theobromine. Increase in the tension of the cerebrospinal fluid was always paralleled by increase in elimination of urine. Evidently there is a connection between secretion of the renal epithelium and that of the epithelium of the choroid plexus. Theobromine influences the sympathetic system which regulates both secretions. Use of theobromine may avert the appearance of by-effects of lumbar puncture.

Presse Médicale, Paris

35: 49-64 (Jan. 12) 1927

Chinosol in Treatment of Epidermophytosis. Lortat-Jacob and C. Bidault.—p. 49.
Deep Roentgen-Ray Treatment in Cancer of Cervix and Vagina. Aubourg and Joly.—p. 50.
*Cesarean Section Late in Labor. H. Vignes.—p. 52.

Cesarean Section Late in Labor.—Vignes summarizes the various methods suggested for the treatment of dystocia. A high cesarean section with conservation of the uterus should be performed only in noninfected cases. In cases of prolonged labor and of infection of the uterus the operation has a high mortality. If there is danger of infection, low cesarean section is the proper intervention. If infection has already set in, externalization of the uterus or hysterectomy is indicated. The former may be performed as the first stage of a deferred hysterectomy.

35: 65-80 (Jan. 15) 1927. Partial Index

Vegetables and Fruits in the Diet of the Chinese. A. Legendre.—p. 75.

35: 81-96 (Jan. 19) 1927

*Tetany and Syphilis of the Parathyroids. L. Langeron et al.—p. 81.
*Treatment of Diabetic Coma. H. Chabanier et al.—p. 83.
Chilblains Are Burns from Radiant Heat. S. Leduc.—p. 91.

Tetany and Syphilis of the Parathyroids.—In Langeron, Dechaume, Delore and Jeannin's case, a man, aged 47, was admitted to the hospital for digestive disorders followed by typical tetanic spasms. Examination of the blood showed a decrease in calcium and an increase in the alkali reserve. Necropsy revealed, among other lesions, gummas in the lungs and syphilitic sclerosis of the parathyroids. The changes in the liver and in the kidneys were insignificant. The corpus striatum appeared almost intact. Lesions of the parathyroid could be responsible for alkalosis and hypocalcemia, which, in turn, might induce neuromuscular hyperexcitability and tetany. Derangement of gastric secretion from chronic alcoholism appeared as a contributing factor in this case.

Treatment of Diabetic Coma.—Chabanier, Lebert, Lobo-Onell and Lumière consider the two phases in diabetes, the precomatose and that of established or "confirmed" coma. In the first phase acidosis is due exclusively to excessive formation of acetone bodies. In the other phase there is retention of acetone in the kidney, due to disturbed function of that organ. The phenomenon is revealed by deficient micturition associated with low concentration of urea in the urine and hyperazotemia. While insulin alone suffices in the precomatose phase, in comatose conditions diuretics and cardiac stimulants should be given in addition. Of twenty-eight cases of diabetic coma, only two resisted insulin treatment. Nine patients died, in spite of the subsidence of acetonemia and recovery from coma.

35: 97-112 (Jan. 22) 1927

Physiopathologic Classification of Goiters. L. Dautrebande.—p. 97.
Trophic Disturbances in Buerger's Disease. G. Boyer and G. Thibault.—p. 100.
*Modern Theory of Convulsive Uremia. M. Nathan.—p. 101.

Modern Theories of Convulsive Uremia.—From the review of researches on the pathogenesis of uremic convulsions, Nathan concludes that the convulsions are caused by metabolic disequilibrium, resulting in an excess of creatinine and a reduction of calcium in the blood. Insufficiency of the parathyroids may be the origin of the changes in the metabolism.

Progrès Médical, Paris

53: 1694-1740 (Nov. 13) 1926

*Blood Sulphur in Normal and Morbid Conditions. M. Loeper.—p. 1701.
*Metabolism of Sulphur. H. Flurin.—p. 1706.
*Biochemical Properties of Sulphur. A. Blanchetière.—p. 1713.
*Measurement of Sulphur in Body Tissues and Fluids. A. Lesure.—p. 1720.
*Sulphur in Treatment of Chronic Arthritis. J. Forestier.—p. 1727.
*Sulphur in External Therapy. L. Bory.—p. 1732.

Blood Sulphur in Normal and Pathologic Conditions.—Blood sulphur is derived partly from food, partly from tissue disintegration and lysis of red blood corpuscles. The amount of sulphur in healthy adults is from 0.07 to 0.1 Gm. per liter of blood serum; 80 per cent is represented by oxidized sulphur, 20 per cent by neutral sulphur. The balance is maintained by a double mechanism. On one side, the sulphur is used by the tissues in the formation of albumin and pigment. On the other side, it is eliminated by the hair, skin, lungs and especially by the bile and kidneys. Fasting, intake of water and tissue hydration, as in edema, reduce the content of sulphur in the blood. Ingestion of meat, thirst and pregnancy increase it. An increase may be observed in certain pleuropulmonary diseases, cancer, purpura and even polycythemia. In chronic nephritis, the sulphur parallels the nitrogen. However, in the physiologic and pathologic conditions mentioned, the proportion of oxidized sulphur remains unchanged Reduction in oxidized sulphur occurs only in diseases involving the liver or the suprarenals. A large part of sulphur is retained in the liver; it is there oxidized and transformed into conjugate sulphates and is eliminated with the bile under the form of taurine. It is the neutral sulphur almost exclusively that is retained by the suprarenals. Accumulation of sulphur in the organism is frequently associated with that of amines; thus melanin is formed. Pigmentation in hepatic and especially in suprarenal insufficiency is the result of an excess of nonoxidized sulphur in the blood.

Metabolism of Sulphur.—From a detailed study of the metabolism of sulphur, Flurin draws the following conclu-

sions: Sulphur is indispensable in the formation of certain tissues (albuminoid substances) and body fluids. The most important rôle of sulphur consists in the fixation of oxygen, and in stimulation of oxidation. As soon as the sulphur is completely oxidized, it ceases to be of any use to the organism and is eliminated. Accordingly, those sulphureted mineral waters which contain nonoxidized sulphur are the most useful.

Biochemical Properties of Sulphur.—Blanchetière studied the biochemical properties of sulphur. Protein sulphur plays an important part in the equilibrium of the body fluids. This is explained by its ability to split molecules in two equal parts. Sulphur also possesses a pronounced oxide-reducing property. In vivo the oxide reduction appeared to involve metabolic products connected with the basal function of the cells. These products are probably nonsaturated bodies, many of which are toxic. Evidently there exist sulphur-hydrogen groups that may exert an antitoxic action.

Determination of Sulphur in the Tissues and Fluids of the Body.—Lesure analyzes the various methods suggested for measuring sulphur in the organism. He finds that the methods applied to the urine are reliable. The results of methods applied to the blood are variable, while those applied to the tissues and organs are without value.

Sulphur in Treatment of Chronic Arthritis.—Forestier emphasizes the fact that nonoxidized sulphur is the only variety from which a therapeutic effect may be obtained. Therefore, nonoxidized sulphur should be used, in the form of sulphureted compounds or hyposulphites. While the action of sulphureted mineral waters in chronic rheumatism has already been ascertained, that of sulphur given in the form of medicines is a matter for the future to determine. Grave lesions of the liver, kidneys or heart, cachexia and progressive tuberculosis are contraindications to administration of sulphureted mineral waters.

External Use of Sulphur.—Bory summarizes the indications for sulphur in skin diseases. Sulphur treatment is classic in scabies, seborrhea and acne. Supplemented by other remedies, it is used in torpid eczema. In this case the preferred method is by small doses of sulphur incorporated in fats. Large doses cause exfoliation, and may therefore be used in rebellious acne or lichen, also in the palliative treatment of hypertrichiasis.

Schweizerische medizinische Wochenschrift, Basel

56: 1209-1232 (Dec. 18) 1926

Tuberculous Meningitis and Injury. F. Zollinger.—p. 1209.
*Cesarean Section. E. Frey.—p. 1216. C'cn.
Persistence of Ductus Arteriosus. I. Mahaim.—p. 1224.

56: 1237-1256 (Dec. 25) 1926

This issue contains the proceedings of the Congress of the Society of Swiss Accident Insurance Physicians. It deals with the significance of the pretraumatic condition for the sequelae of injuries.

Cesarean Section.—Frey concludes his study of the indications for and the technic and results of cesarian section. It is becoming the method of choice in a large number of pathologic labors, including not only placenta praevia and eclampsia, but also abnormal presentations.

Policlinico, Rome

33: 1777-1816 (Dec. 20) 1926

*Glycemic Retinitis. Q. di Marzio.—p. 1777.
Anesthesia in Private Practice. F. Repaci.—p. 1782.
Instrument for the Study of Dermographism. Parodi.—p. 1786.

Glycemic Retinitis.—Marzio observed retinitis with all the characteristics of the diabetic type in several patients with abnormally low blood sugar. There were not any signs of nephritis. Administration of sugar improved the condition. He suggests using the same term—glycemic retinitis—to designate retinitis in hyperglycemia as well as in hypoglycemia.

Riforma Medica, Naples

42: 1201-1224 (Dec. 20) 1926

Pulmonary Tuberculosis. A. Barlocco.—p. 1201.
Histamine Test in Stomach Diseases. P. Berri and M. Weinberger.—p. 1205.
*Cardiac Reflexes. C. Minerbi.—p. 1210.
Inhalation of Radioactive Water. A. della Cioppa.—p. 1212.
Mixed Infection with Typhoid and Malaria. M. Rega.—p. 1220.

Cardiac Reflexes from Forcible Movements of the Head.—Minerbi observed two cardiac reflexes in healthy subjects: One of them he calls the reflex of the vertebral vessels and the other the reflex of the internal jugular vein. The reflex of the right vertebral vessels actively dilates the right auricle: that of the left vertebral vessels, the left auricle. These reflexes are associated with the "retrosternal venous phenomenon" (dilatation of the vena cava and innominate veins) and the "oncopleural phenomenon," the latter consisting in dilatation of the capillaries and venules of the endothoracic fascia. Compression of the internal jugular vein also induces the two last mentioned phenomena. The jugular reflex is produced in the standing subject if he suddenly bends his head backward. In testing the reflex of the vertebral vessels, the subject should lie horizontally (without pillows) and first turn the head to one side and then suddenly and forcibly turn the face to the front. In sympathicotonic individuals, vasoconstrictive reactions appear instead of vasodilatation.

Semana Médica, Buenos Aires

33: 1649-1720 (Dec. 23) 1926

*Postmortem Cesarean Section. E. Zárate and D. E. V. Esquivel.—p. 1649.
*Blood Sugar After Suprarenalectomy. O. Pico Estrada.—p. 1653.
Tuberculosis in Childhood. C. Carreño.—p. 1658.
Pathology of Generalized Primary Peritonitis with Calcareous Degeneration. D. Brachetto Brian.—p. 1663.
*Radiography of Uterus and Tubes. C. Heuser.—p. 1667.
Diphtheria in the Adult. R. F. Vaccarezza.—p. 1671. C'cn.
Mercurochrome-220 Soluble in Infections. R. Landivar.—p. 1707.
Generalized Tuberculosis of the Glands. O. P. Curti.—p. 1708.
*Psychology of Physicians of the Mayo Clinic. L. O. Zeno.—p. 1711.
Twin Pregnancy with Molar Degeneration of One Ovum. S. E. Bermann.—p. 1713.

Postmortem Cesarean Section with Living Child.—In two cases after the mother had died, Zárate and Esquivel performed cesarean section and delivered a living child. Unless delivered, the fetus survives the mother's death fifteen or twenty minutes at most.

Blood Sugar, Glucose Consumption and Formation of Glycogen After Removal of Suprarenals.—In experiments on dogs by Pico Estrada the blood sugar fell after removal of the suprarenals. At death, hepatic and cardiac glycogen had diminished considerably; the decrease in muscular glycogen was also pronounced but not so great. After intravenous injection of dextrose there was little change in the hepatic glycogen, and the glycogen in the muscles and heart increased only slightly. In suprarenalectomized animals, the blood in the femoral vein contains as much glucose as does the arterial blood. Suprarenalectomy seems to bring about a disturbance in the metabolism of the carbohydrates, decreasing the glycogenic function of the liver.

Roentgenography of the Uterus and Tubes.—Heuser was the first (1922) to secure roentgenograms of the uterus with iodized oil. He now publishes some of his latest pictures. After filling the uterus with oil, fluoroscopy aided by a magnifying glass will show slow wavelike muscular contractions toward the neck, if there is any foreign body (remnants of abortion, pregnancy or fibroma) present. In hyperthyroid patients the waves are stronger.

Psychology of American Physicians.—After some months spent at the Mayo Clinic, Zeno discusses American characteristics in a series of articles. Americans, from the President down, are democratic in every way, both materially and spiritually. Even at the most prominent clinic they are all "boys" and "big boys." Architecture appeals to them more than literature and offers a better mode of expression. The simple and clear cut American mentality shuns discussion. Routine and specialization have become supreme. All emergencies are anticipated. "Time is money" does not mean too much fondness for dollars, but respect for the other fellow's time. Good nature and optimism are noteworthy features everywhere.

Archiv für exp. Pathologie and Pharmak., Leipzig

117: 257-380 (Nov.) 1926

Effect of Cyanamide on Cysteine and Cystine in Vitro. S. Glaubach. —p. 257.
*Treatment of Mercury Poisoning. E. Hesse.—p. 266.
Sensitizing Influence of Epinephrine to the Action of Strophanthin. P. Popow.—p. 279.
*Pharmacology of Cholesterol and Sitosterol. H. Seel.—p. 282.
Pharmacologic Action of Lead Acetate. G. Wolpe.—p. 306.
*Effect of Alkali on the Heart. A. Fröhlich and A. Solé.—pp. 322 and 341.
*Chronic Effects of Saponin. H. Handovsky and I. von Trossel.—p. 347.
Electroenergetics of Heart Muscle. P. Klee et al.—p. 360.

Treatment of Mercury Poisoning.—In experiments on rabbits and dogs, Hesse found that thioacetic acid or its strontium salt had a powerful detoxicating effect in poisoning from lethal doses of mercury administered parenterally. An aqueous solution of from 2 to 3 per cent of thioacetic acid, neutralized with sodium bicarbonate, was injected subcutaneously in the neck of the animals about two hours after intravenous injection of a lethal dose of mercuric chloride. Animals treated in such a manner did not have albumin in the urine, and an initial loss of weight was usually compensated for within three weeks.

Pharmacology of Cholesterol and Sitosterol.—Cholesterol and its oxidation products produced increase in tonus in Seel's experiments on the normal surviving frog heart. The harmful effect of barium chloride, copper sulphate, chloral, apomorphine, aconitine and biliary acids on muscle was completely inhibited. The effect of muscarine in causing cessation of heart function was counteracted by cholesterol and sitosterol preparations. The detoxicating properties of cholesterol, sitosterol and their derivatives are characterized by adsorptive displacement of toxins and by stimulation of the heart muscle. They also had a tonic effect on the smooth musculature of the uterus of the hog.

Effect of Alkali on the Heart.—In experiments on the surviving frog heart, Fröhlich and Solé found that slight amounts of sodium hydroxide and sodium carbonate inhibited heart block from alcohol, strophanthin, barium, cocaine, veratrin or heat.

Chronic Effects of Saponin.—Handovsky and Trossel injected saponin into rabbits and noted a marked increase in the blood pressure, which persisted up to thirty days. The chronic effects of saponin were characterized by changes in the distribution of cholesterol in the organism. The fat content of the suprarenals was lower than in normal animals and sensitiveness to epinephrine was increased. It was not possible to produce acute effects from saponin in isolated animal organs.

Beiträge zur Klinik der Tuberkulose, Berlin

65: 1-192 (Nov. 25) 1926

*Simultaneous Test for Tubercle Bacilli and Elastic Fibers. F. Jessen.—p. 4.
Sanatoriums and the Crusade Against Tuberculosis. E. Peters.—p. 6.
Course of Tuberculosis During Progressive Invasion. K. Diehl.—p. 14.
Chronic Mixed Infection in Pulmonary Tuberculosis. E. Möller.—p. 35.
*Sensitiveness to Tuberculin in Tertiary Tuberculosis. W. Schnippenkötter.—p. 41.
*Surgical Paralysis of the Diaphragm. W. Schnippenkötter.—p. 56.
Sedimentation Speed and Sanatorium Statistics. W. Schnippenkötter and A. B. Behrmann.—p. 85.
Epinephrine Blood Pressure Curve and Serum Calcium in High Altitudes. M. Dugge.—p. 96.
The German Sanatorium in Davos. H. Alexander.—p. 112.
—p. 112.
Spontaneous Shrinking of Caverns. H. Alexander.—p. 119.
"Sanocrysin" Reaction. A. Beekmann.—p. 130.
Manometric Measurements in Pneumothorax. R. Bucher.—p. 139.
Exercise in Pulmonary Tuberculosis. A. Brecke.—p. 143.
Pathologic Processes and Clinical Picture in Pulmonary Tuberculosis. O. Ziegler.—p. 163.
Relations Between Pulmonary Tuberculosis and the Heart. T. Janssen. —p. 170.
Reversibility in Chemistry and Metabolism. W. Ponndorf.—p. 184.

Simultaneous Test for Tubercle Bacilli and Elastic Fibers.—Jensen employs the following procedure: A mixture of 4 cc. of sputum and 10 cc. of normal sodium hydroxide is heated for twenty minutes in a water bath at 50 C. and then centrifugalized. The sediment is evaporated in the incubator, fixed in a flame, stained with carbolfuchsin in heat, washed, decolorized with 3 per cent hydrochloric acid alcohol, stained with an alcoholic solution of hematoxylin and lithium carbonate for from one to two minutes, washed, and decolorized with a ferric chloride solution for a few seconds. The tubercle bacilli are stained a clear red and the elastic fibers appear grayish blue.

Allergic Tests in Tertiary Tuberculosis and Seasonal Variations in Sensitiveness to Tuberculin.—In adults with tertiary tuberculosis, who had been in residence in a sanatorium up to fourteen months, Diehl did not observe any essential changes in the tuberculin reaction after intracutaneous inoculation. The local sensitiveness to tuberculin is an expression of the capacity of the organism to form tuberculous tissue. In inactive tuberculosis the local sensitiveness decreases but can be increased to the maximum for the individual by specific stimulus. In the first months of the year there is a decrease in sensitiveness to tuberculin, corresponding to the decrease in the general resistence of the human organism.

Surgical Paralysis of the Diaphragm.—In experiments on cats, Schnippenkötter found that the variations of pressure in the pleural cavity during respiration were less marked in the apex than in the base. These variations constitute an expression of the lung ventilation. After complete paralysis of one half of the diaphragm, the thoracic musculature on the side operated on rapidly hypertrophied and the thoracic respiration was increased compared with that of the other side. Clinically phrenic exeresis was followed by great improvement in 15 per cent and had a favorable influence in about 30 per cent of the cases. A good therapeutic effect is obtained in artificial pneumothorax by an ideal collapse. A medium collapse exists in thoracoplasty, but there is an exceptional immobilization. A very slight collapse of the lung is obtained by phrenic exeresis. The favorable therapeutic effect results chiefly from immobilization and inhibition of respiration. This is accomplished by voluntary abdominal respiration, or fixation of one half of the thorax with a broad adhesive plaster. The function of the total respiratory musculature on one side is thus undisturbed, whereas the phrenectomized side remains immovable.

Deutsches Archiv für klinische Medizin, Leipzig

153: 129-256 (Dec.) 1926

*Insulin Treatment. H. Holzer and O. Klein.—p. 129.
Fractional Aspiration of Gastric Contents. F. Seeber.—p. 152.
*Thyroid Extract and the Heart. S. Lauter and Determann.—p. 162.
*Hypoglycemic Reaction in Lactation. T. Stenström.—p. 181.
Variations in Leukocytes. G. Walterhöfer.—p. 190.
Exertion Epinephrine and the Blood Vessels. A. v. Szakáll.—p. 206.
*Bilirubin in the Cerebrospinal Fluid. H. von Gündell and I. Jacobi. —p. 215.
Medicinal Treatment of Obesity. H. W. Knipping and E. Wheeler-Hill. —p. 223.
Isolated Resuscitation of Right Ventricle. E. Schott.—p. 239.

Insulin Treatment.—Holzer and Klein had good results in treatment of grave diabetes with large doses of insulin (100 units or more) and of carbohydrates (from 120 to 200 Gm.). The patients improved rapidly and the insulin dose was soon reduced. The authors attribute the improvement to a formation of carbohydrate reserves and suggest the preventive use of the treatment in patients with grave and moderately grave diabetes. It would be necessary to repeat the course several times a year.

Thyroid Extract and the Heart.—Lauter and Determann added thyroid extracts to the fluid with which they were perfusing rabbit hearts. For a short period the heart beat became slower and weaker. After this the frequency and strength increased. The auricles were strongly affected.

Hypoglycemic Reaction in Lactation.—Stenström's patient was a woman with insufficiency of the mitral and aortic valves and tuberculosis of the lungs. She was suckling her child. Symptoms resembling moderate insulin poisoning developed when she was put on a diet consisting chiefly of fats and vegetables. On one day the blood sugar was as low as 0.04 per cent. On resumption of the diet after the lactation period, the blood sugar remained about normal. He recalls Widmark and Carlens' observations on hypogly-

cemia in milch cows. These authors attribute the puerperal paralysis of cows to hypoglycemia and treat it successfully with intravenous injections of dextrose.

Bilirubin in Cerebrospinal Fluid.—Gündell and Jacobi found only very small amounts of bilirubin in the cerebrospinal fluid of patients with grave jaundice (blood bilirubin about 1:7,000).

153: 257-380 (Dec.) 1926

Histopathology of Gout. A. M. Brogsitter.—p. 257. Ct'd.
Sakaguchi's Urine Reaction. F. A. Hoppe-Seyler.—p. 327.
The Mucosa in Chronic Gastritis. K. Gutzeit.—p. 334.
Benign Tumors of the Stomach. K. Gutzeit.—p. 346.
*Water Metabolism. H. Marx.—p. 358.

Water Metabolism.—Marx found that the blood of healthy persons subjected to hot baths and to light baths became diluted. It became inspissated if the subjects drank a little water, which provoked profuse extrarenal elimination of water. Splenectomy did not influence the results. Nephritic patients in the stage of insufficiency of the kidneys did not react to these vasomotor stimuli, which indicates pathologic changes in the capillaries of the whole body, not only of the kidneys.

Deutsche medizinische Wochenschrift, Berlin

52: 2187-2206 (Dec. 24) 1926

Pharmacology of Protein Treatment. H. Freund.—p. 2187.
Synergism and Antagonism. E. Starkenstein.—p. 2189.
*Pernicious Anemia and Tuberculosis. E. Mathias.—p. 2190.
Lüttge-von Mertz's Reaction. S. Joseph and E. Rabau.—p. 2191.
*Poisoning with Arsine. R. Labes.—p. 2192. C'en.
*Nephritic Anuria. E. Glass.—p. 2193.
Dislocation of Elbow Plus Rupture of Artery. J. Wulsten.—p. 2194.
Rhythmic Faradization. N. Korotnew.—p. 2195.
Disinfecting Value of Alcohol. Schumburg.—p. 2196.
Technical Novelties. M. Schütz.—p. 2197.
Obligatory Reports on Infectious Diseases. G. Alexander-Katz.—p. 2198.
Standardization of Serums and Drugs. Schlossberger and P. Wolff.—p. 2199.

Pernicious Anemia and Tuberculosis.—Mathias discusses the question why cachectic pernicious anemia patients do not develop tuberculosis. He did not see any active tuberculosis among thirty-six necropsies on such subjects. He suggests that the lack of oxygen may be responsible for this apparent immunity.

Poisoning with Arsine.—Labes found that arsine (AsH_3) is oxidized by the oxyhemoglobin of the erythrocytes to a colloidal form of arsenic, which destroys the structure of the erythrocytes.

Nephritic Anuria.—Glass reports the history and results of necropsy in a woman who died from grave subacute extracapillary glomerulonephritis after ten days of anuria. The blood pressure had been normal, and slight edema was noted only on the last day. Decapsulation of one kidney did not improve the condition.

Deutsche Zeitschrift für Chirurgie, Leipzig

199: 1-144 (Oct.) 1926

Tumor and Trauma. F. Sauerbruch.—p. 1.
Tuberculosis and Trauma. Zollinger.—p. 11.
*Prognosis of Surgically Treated Injuries of Peripheral Nerves. A. Jalcowitz.—p. 31.
*Are There Sensory Fibers in the Anterior Roots? A. W. Meyer.—p. 38.
*Surgical Treatment of Gastro-Intestinal Crises. F. Stein.—p. 66.
Spontaneous Gangrene in Syphilis. F. Kazda.—p. 74.
Foreign Bodies Forgotten at Operation. H. Haberer.—p. 96.
*Pernicious Anemia and Cancer Metastasis in the Spleen. R. Kraft.—p. 102.
Total Colectomy for Tuberculosis. H. Brütt.—p. 110.
Inflammation of the Empty Hernial Sac. M. Madlener.—p. 114.
Primary Tuberculosis of the Mesenteric Glands in Children. M. Mettenleiter.—p. 120.
Situs Viscerum Inversus. W. Mull.—p. 127.
Endothoracic Cysts. W. Eigler.—p. 133.
Topographic Anatomy of the Veins of the Forearm. M. Leitschick.—p. 142.

Prognosis of Surgically Treated Injuries of Peripheral Nerves.—Two hundred and ninety-three cases of gunshot injuries to peripheral nerves were treated in Eiselsberg's clinic during or following the war. In ninety-six of these Jalcowitz was able to obtain information regarding the fate of the nerve from seven to ten years after operation. From his statistics it appears that an interval of nine months between injury and operation is about the longest that allows any prospect of success. The prognosis is better for motor than for sensory fibers; vasomotor nerves are almost completely refractory to treatment. The best results were obtained with the radial nerve; then follow the median and the sciatic. The outlook is not so good for the ulnar and peroneal. The prognosis is better for neurolysis than for suture. The results of external neurolysis were excellent. Invagination of the suture in muscle flaps seemed to give better results than tubulization or wrapping in fat. Patients on whom plastic bridging had been done were not among the reexamined. Improvement was noted immediately after the operation in a fifth of the cases; in most cases of neurolysis it began in the first six months; in a majority of the nerve suture cases, between the third and ninth months; the return of sensibility comes later, if at all. Improvement may go on for a year, seldom longer. In cases in which psychogenic inhibitions are at the base of a lack of correspondence between motility and response to electric stimulus, suitable treatment may achieve excellent results even after many years.

The Question of Sensory Fibers in the Anterior Roots.—Meyer has gone carefully into the literature on this subject and made experimental and clinical studies. His conclusion is that there does not exist as yet any evidence to controvert Bell's law, according to which the paths of sensation lie exclusively in the posterior roots.

Surgical Treatment of Gastro-Intestinal Crises in Tabes.—In Stein's patient, a man, aged 36, Förster's operation with Guleke's modification was followed by signal improvement lasting for four or five months. A year after this operation his condition had become so much worse that bilateral vagotomy according to Exner was done. It was a failure. Four months later the rami communicantes on one side were divided. This resulted merely in a shifting in the intensity of the symptoms: the retching and vomiting were lessened and the gastric pains became more severe.

Pernicious Anemia and Cancer Metastasis in the Spleen.—The double disease picture of carcinoma of the breast and pernicious anemia was presented by a woman, aged 49. The anemia had preceded the appearance of the breast tumor by nine months and the blood picture corresponded to the pernicious type rather than to secondary anemia. Hence, when the patient's general condition failed to improve after recovery from excision of the breast tumor, Kraft performed splenectomy. The spleen was found to be completely infiltrated by carcinoma. Signs of metastasis were not discovered in the liver or other organs. The patient recovered and her general health improved rapidly. The number of erythrocytes in the blood and the hemoglobin steadily rose. In the four months that had passed since the operation, she had remained well. Kraft believes that the anemia was primary and that the metastasis in the spleen, an organ ordinarily in a high degree resistant to cancer metastasis, may be explainable by the already existing changes in that organ.

Medizinische Klinik, Berlin

22: 1985-2022 (Dec. 24) 1926

Pericolitis. P. Drevermann.—p. 1985.
The Gastro-Intestinal System and Female Genital Organs. E. Vogt.—p. 1986.
Vasoconstrictor Neurosis of Nipple. M. Cohn.—p. 1988.
*Tabetic Atrophy of the Optic Nerve and the Treatment of Syphilis. M. Fischer-Ascher.—p. 1991.
Chronic Dysentery. H. Koopmann and E. Krüger.—p. 1993.
Swedish Gymnastics. M. Kaufmann.—p. 1996.
Bovine Tuberculosis in Man. K. Sysak.—p. 1998.
Microscopy of Temperature Changes of Capillaries. E. Wollheim and H. Moral.—p. 1999.
Meinicke Microreaction. E. Meinicke.—p. 2002.
The Daily Round. H. Kritzler-Kosch.—p. 2002. C'tn.
Psychosis from Fall or Syphilis? W. Brandis.—p. 2006.
Obstetrics. W. Liepmann and G. Müggenburg.—p. 2007.
Medicine and Patents. Bock.—p. 2020.
Diseases of Infancy and Childhood. K. Blühdorn and H. Völckers. Supplement.—pp. 175-198.

Treatment of Syphilis and Tabetic Atrophy of the Optic Nerve.—Fischer-Ascher investigated the history of 177 cases

of atrophy of the optic nerve in tabes. Only one of these patients had been sufficiently treated, and in his case the atrophy was mild. She concludes that patients who have had thorough treatment are better protected against neurosyphilis than those who have had insufficient treatment.

Münchener medizinische Wochenschrift, Munich

73: 2151-2196 (Dec. 17) 1926

*Nitrogen Binding in Protein Synthesis. F. Knoop.—p. 2151.
*Alkali Reserve in Diseases of the Thyroid. F. Walinski and E. Herzfeld. —p. 2153.
*Serotherapy of Puerperal Sepsis. K. Warnekros et al.—p. 2155.
*Detoxication of Scopolamine. H. Kreitmair.—p. 2158.
Scopolamine-Ephedrine. E. Gutmann.—p. 2160.
Gastroscopy in Spastic Niche. R. Korbsch.—p. 2161.
Diagnostic Culture of Tubercle Bacilli. J. Hohn.—p. 2162.
Treatment of Abscess of the Prostate. E. Hempel.—p. 2163.
Intestinal Strictures in Pernicious Anemia. I. Zadek.—p. 2165.
Hot Baths and Auscultation of the Heart. J. S. Schwarzmann.—p. 2167.
Origin of Respiratory Sounds. A. J. Ignatowski and M. von Lemesic. —p. 2168.
Anonychia and Assimilation of Phalanges. A. Dombrowski.—p. 2168.
Migration of Needle in the Body. Kircher.—p. 2169.
Reduction of Paraphimosis. G. Baumm.—p. 2169.
Surgery of Cholelithiasis. A. Krecke.—p. 2172.
The Public Health Physician and the Public. H. Krauss.—p. 2175.
The Physician and the Medical Man. L. Huismans.—p. 2175.

Nitrogen Binding in Protein Synthesis.—Knoop found that keto-acids hydrated at room temperature and normal pressure after addition of catalyzers (platinum or palladium) add ammonia simultaneously with the hydration more easily than they add hydrogen alone. In other words, an amino-acid is formed more easily than an oxyacid, which has been frequently regarded as the result of physiologic reduction. It is probable that amino-acids are synthesized in the cells, wherever keto-acids and ammonia are present and the conditions for reduction obtain. Cysteine as well as an anorganic donor of hydrogen (iron sulphate) induced such an amino-acid synthesis in vitro. On the other hand, if an amino-acid is oxidized to an imino-acid (keto-acid plus ammonia) the latter may deprive not only cysteine but other organic substances of hydrogen and thus act as an oxidizing agent. It seems, therefore, that the organism is capable of the synthesis not only of fat and of carbohydrates but also of amino-acids. It may reverse all the reactions, leading from one group of foodstuffs to the other, according to its needs.

Alkali Reserve in Diseases of the Thyroid.—Walinski and Herzfeld found a lowered alkali reserve in all their patients with grave thyrotoxic symptoms.

Serotherapy of Puerperal Sepsis.—Warnekros, Louros and Becker applied the methods which had been used in the study and serotherapy of scarlet fever to the hemolytic streptococci isolated from a case of fatal puerperal sepsis. They obtained a specific toxin as well as an antiserum. With the latter they treated 200 women suffering from grave puerperal sepsis. All the patients recovered.

Detoxication of Scopolamine.—Kreitmair found that ephedrine hydrochloride is an antidote to scopolamine. It does not inhibit the narcotic action of the latter. Therefore it may be combined with it in order to prevent the possibility of poisoning in hypersensitive patients.

Monatsschrift für Geb. und Gynäkologie, Berlin

75: 1-232 (Nov.) 1926

*Unsuccessful Obstetric Interventions. W. Stoeckel.—p. 7.
*Sterility and Constitution. A. Mayer.—p. 21.
Joint Diseases in the Menopause. W. His.—p. 26.
Familial Malformations. O. Hildebrand.—p. 32.
*Metrorrhagias from Thrombopenia. G. Klemperer.—p. 35.
The Value of Genital Gland Preparations. C. Posner.—p. 42.
*The Present Status of the Lung Test. F. Strassmann.—p. 47.
Tubal Insufflation and Salpingostomy for Sterility. H. Fuchs.—p. 56.
The Question of Hallux Valgus. R. Mühsam.—p. 65.
Operation for Prolapse and Retroflexion of the Uterus. G. Schubert.—p. 69.
Radiography of the Bladder in the Diagnosis of Urethral and Vesical Fistulas. A. Lewin.—p. 76.
Effective and Ineffective Abortifacients. G. Strassmann.—p. 79.
Primary Carcinoma of the Ureter. H. L. Posner.—p. 86.
*Exclusion of a Kidney by Knotting the Ureter. J. Braude.—p. 90.
*Experiments in Knotting the Ureter. E. M. Schwarzman.—p. 103.
Pyelitis of Pregnancy. P. Meyer.—p. 109.
Congenital Formation, Resembling Cystoma, in the Right Ovary. H. O. Neumann.—p. 123.
Uterus Pseudounicornis. M. Jung.—p. 131.
The Naegele Forceps in Breech Presentations. G. E. Otto.—p. 143.
Malformations from Arrested Development. A. Stahl.—p. 150.
Roentgen Irradiation of Myomas. G. Zimmer.—p. 157.
Spinal Anesthesia in Cesarean Section. E. Friedmann.—p. 163.
Causes of Acardia. E. Strassmann.—p. 172.
Gynecologic Radiotherapy in 1925. C. H. Engelbrecht.—p. 189.

Unsuccessful Obstetric Interventions.—Stoeckel protests vigorously against the misuse of high forceps. In thirty-nine of the fifty-five cases here analyzed, in which a parturient woman was brought into the clinic after an unsuccessful obstetric operation in the home, the high forceps operation was to blame. He sees a false attitude of mind in obstetric matters, which allows impatience, and notes that the economic situation financially rewards impatience. The high forceps operation is a procedure of great danger and should be undertaken by none except the most experienced and technically perfected obstetricians.

Sterility and Constitution.—Among the constitutional causes of sterility, Mayer discusses the influence of the endocrine glands. Modern opinion is that the lactic acid and the glycogen content of the vaginal secretion changes with the ovarian cycle. The thyroid, thymus, pituitary and suprarenals are also important in the matter of sterility. A defective decidua may be due to a scanty supply of mucosa or to insufficient stimulus to transformation from the ovary. Hypoplasia of the uterine wall, leading to abortion, may remedy itself in the course of a number of partially completed pregnancies, so that future children are carried to term. Regarding the relation between sterility and myoma, he holds that both are the consequence of disturbed ovarian function of constitutional origin. He found sterility more frequently with carcinoma of the body of the uterus than of the cervix and holds that the rôle of the constitution is more important in the former than in the latter. Sterility was also more prevalent with primary than with secondary carcinoma of the ovary; so that in these cases he considers the sterility as a "precancerous stage."

Metrorrhagias from Thrombopenia.—In three cases here described, severe metrorrhagia was associated with a tendency to subcutaneous hemorrhages. The blood picture revealed thrombopenia. The first case was promptly cured by extirpation of the spleen. The patient, a girl, aged 20, remained well for four years, when she was lost sight of. In the second case, in a woman, aged 23, the same treatment was temporarily successful, but in a year's time the thrombocytes, which immediately after the operation rose from 24,000 to 141,000, had fallen to 13,000, and a year and a half after the splenectomy the severe uterine and subcutaneous bleedings reappeared. Two courses of roentgen irradiations of the bones, nine months apart, brought about clinical cure, with a gradual increase of thrombocytes to 26,000 and normal bleeding time. The patient has felt well and been able to work for a year. In the third patient, aged 13 years, roentgen irradiation of the long and flat bones, without splenectomy, was successful. The patient has been under observation five months.

Present Status of the Lung Test.—The two cases described, with photomicrographs, confirm the observations of Fraenckel and Weimann that, following the cessation of placental respiration on the death of the mother, premature respiratory movements may force amniotic fluid into the fetal lungs. The resulting expansion of the alveoli seen in the microscopic picture resembles the expansion by air in lungs that have breathed.

Knotting of the Ureter After Resection.—Braude advises making two or three simple knots in the stump of the ureter when exclusion of a kidney is indicated after ureteral resection. The knots should be placed side by side as high up as possible and should be drawn tight. This suffices to obliterate the ureteral lumen, and a ligature below the knots is not obligatory. He reports four cases in which the

method was used successfully. It is simpler than Kawasoye's complicated knot. The urinary organs must, of course, be free from infection. In experiments on two cadavers and on nine dogs, Schwarzman, in Braude's clinic, found that torsion of the ureter, according to Poten, did not suffice to obliterate the lumen; the effective feature in Poten's method is the ligature at the end of the stump. A single simple knotting of the ureter could not be trusted to occlude it, but two simple knots, one above the other, completely obliterated the lumen. In none of the dogs did primary atrophy of the kidney take place; hydronephrosis, of one grade or another, always appeared.

Virchows Archiv für path. Anat. und Physiol., Berlin

262: 305-564 (Nov. 12) 1926

*Beriberi and Hydrocyanic Acid Poisoning. N. Messerle.—p. 305.
Granuloma of Conjunctiva Caused by Rhinosporidium Seeberi. N. Orlandi.—p. 314.
Spontaneous Rupture of the Spleen in Endocarditis. A. Krokiewicz.—p. 328.
Healing of Traumatic Ulcerous Processes in Elk's Hoof. E. Åkerblom.—p. 333.
Diffuse Sclerosis of Skin and Internal Organs. J. Heine.—p. 351.
*Origin of Osteitis Fibrosa. F. J. Lang and K. Häupl.—p. 383.
Excretion of Fibrin in Fibrinous Pleurisy. A. Lauche.—p. 406.
Aneurysm and Gummas in the Liver in Secondary Syphilis. H. Lenhartz and H. Gürich.—p. 416.
Laparotomy and the Solar Plexus. W. Lebedenko.—p. 424.
Histopathologic Changes in Sympathetic Ganglions. K. Terplan.—p. 431.
Observations in Hydrocephalic Brains. H. Guillery.—p. 499.
Cystic Liver. L. Wackerle.—p. 508.
Cystic Breasts in Young Women. E. Hahn.—p. 531.

Histologic Observations in Beriberi and Hydrocyanic Acid Poisoning.—Hypertrophy of the suprarenals was observed macroscopically in Messerle's studies of pigeons that had beriberi. It was present but was less striking in pigeons poisoned with hydrocyanic acid. Fatty degeneration of the body musculature and of certain areas of the heart muscle was noted in both cases. In birds poisoned by hydrocyanic acid the fatty degeneration occurred in fine droplets. The myelin sheaths of the nerves of the wing and leg were tumefied and broken into fragments. The cells of the anterior horns of the spinal cord had undergone atrophy and vacuolar degeneration; the myelin sheaths were swollen and were disappearing. These changes were less pronounced in the birds suffering from beriberi. The changes in the kidney and liver were in general of the same nature in the two groups of birds, except the thickening of Glisson's capsule and of the connective tissue, which was noted only in the pigeons poisoned with hydrocyanic acid.

Origin of Osteitis Fibrosa.—Lang and Häupl report five cases of local and three cases of generalized osteitis fibrosa. On the basis of histologic examinations they assert that local osteitis fibrosa is not an independent skeletal disease but a sequel of trauma or irritation. Generalized osteitis fibrosa (in osteomalacia and rachitis) cannot be differentiated morphologically from the local form. It also represents a secondary condition, dependent on mechanical stimulation. The osteomalacic and rachitic skeletal systems are particularly exposed to external injury and physiologic functional influences. The changes characteristic of osteitis fibrosa are seen in other pathologic conditions, beside osteomalacia and rachitis, which decrease the mechanical resistance of the bones, for example, certain cases of osteoporosis.

Wiener klinische Wochenschrift, Vienna

39: 1505-1536 (Dec. 23) 1926

Lacnnec. M. Neuburger.—p. 1505.
Action of Ergotoxin. H. L. Otto.—p. 1507.
Therapeutic Malaria Not Transmissible by Anopheles. E. Weiss.—p. 1507.
*Phototherapy in Preeclamptic Conditions. A. Mayer.—p. 1508.
Agranulocytosis. H. Chiari and F. Redlich.—p. 1510.
Acute and Subacute Atrophy of the Liver. A. Kirch.—p. 1512.
Serotherapy in Viper Bites. P. Moritsch.—p. 1514.
Impalement on Sled. F. Starlinger.—p. 1515.
Introduction of Sounds in Stenosis of Esophagus. G. Lotheissen.—p. 1516.
Treatment of Chronic Constipation. H. Steindl.—p. 1517.
Roentgen-Ray Biology and Therapy. L. Freund.—p. 1519.
Meningitis and Meningism. H. Mautner. Supplement.—pp. 1-16.

Phototherapy in Preeclamptic Conditions.—Mayer recommends artificial sunlight in treatment of preeclamptic conditions.

Zeitschrift f. d. ges. experimentelle Medizin, Berlin

53: 1-286 (Nov. 12) 1926

Technic of Gas Analysis in Medicine. H. W. Knipping.—p. 1.
*Effect of Lecithin on the Animal Organism. M. T. Friedmann.—p. 17.
Pathologic Decomposition of Protein. M. Schierge.—p. 44.
Colorimetric Determination of the Amount of Blood Plasma. W. Berger and O. Galehr.—p. 57.
*Effect of Lecithin on the Isolated Heart of the Frog. S. W. Ziganow.—p. 73.
Relation Between Oxygen Capacity and Hemoglobin Content of Human Blood. M. Ohno.—p. 82.
*Action of Blood Serum from the Splenic Vein on Erythropoiesis. T. Istamanowa and W. Tschilipenko.—p. 91.
*Absorption of Cholesterol in the Intestine. A. Mjassnikow and B. Iljinsky.—p. 100.
Physiology of Capillaries in Man. H. Heimberger.—p. 107.
*Nature of the Botelho Reaction. H. Hilarowicz.—p. 121.
*Blood Circulation in the Collapsed Lung in Experimental Pneumothorax. R. Weiss.—p. 138.
Effect of Quinisal. E. Kaufmann and E. Meyer.—p. 189.
Effect of the Vagus on the Rhythm and Dynamics of the Mammalian Heart. H. Straub.—p. 197.
Venesection and Hemoglobin Resistance. F. von Krüger and W. Gerlach.—p. 233.
Analysis of Pulse Rhythm with Pulse Resonator. F. Kraus et al.—p. 243.

Effect of Lecithin on the Animal Organism.—Lecithin accelerated the growth and changed the color of tadpoles in Friedmann's experiments. Administered subcutaneously, it increased resistance against carbon dioxide in frogs and guinea-pigs and against chloroform and bromine vapors, oxygen hunger and overheating in frogs, guinea-pigs, cats and dogs.

Effect of Lecithin on the Surviving Heart of the Frog.—Lecithin reacted on the heart as a dynamic active substance in Ziganow's experiments on frogs. The effect was intensified when the temperature of the perfusing fluid and of the heart was increased. It apparently effected the heart muscle alone and did not act on the sympathetic or parasympathetic. The systoles increased and the diastoles changed according to the tonus of the heart muscle and the concentration of the substance. When lecithin was added to the perfusion fluid in the optimal concentration of 1:10,000, the function of the surviving heart was maintained on the same level for a considerable length of time. The effect of lecithin on the heart explains its favorable influence in heart poisoning caused by chloroform muscarine, etc.

Action of Blood Serum from the Splenic Vein on Erythropoiesis.—In experiments on rabbits, Istamanowa and Tschilipenko found that intravenous injection of blood serum from the splenic vein increased the number of supravitally staining erythrocytes. Apparently this blood serum contains substances that possess a stimulating effect on erythropoiesis. The general circulation contains normally only small amounts of such substances. In rabbits made anemic by venesection, the content of stimulating agents in the blood from the splenic vein was normal, whereas it was slightly increased in the general circulation. In pyrodine anemia, a marked increase of these substances was noted in the general circulation; in the blood from the splenic vein they were found in amounts somewhat greater than in normal animals.

Fate of Nutritional Cholesterol After Absorption by the Intestine.—By means of a gastric sound, Mjassnikow and Iljinsky administered to rabbits 1 Gm. of cholesterol suspended in oil or yolk of egg. They noted an increase of from 0.015 to 0.025 per cent in the cholesterol of the blood of the duodenal vein. The cholesterol of liver tissue was increased on the average by 0.1 Gm. per hundred grams of tissue. From three to four hours after administration of 1 Gm. of cholesterol, increase of this substance could not be detected in the general circulation or in blood from other intestinal segments. After absorption by the intestine, cholesterol, apparently, is not taken up by the lymph but by the blood stream and is partially, at least, deposited in the liver.

Nature of the Botelho Reaction.—The Botelho test is an iodometric protein precipitation reaction for blood serum,

used for diagnosis of cancer, pregnancy, etc. Studying the mechanism of the reaction, Hilarowicz found that Botelho's iodine reagent could be substituted by alkaloid reagents, such as trinitrophenol in the form of Essbach's reagent. The reaction depended first of all on the total protein concentration of the blood serum. The reaction was positive in every case of hydremia, independently of the nature of the disease; for instance, after intravenous infusion of sodium chloride. The outcome of the reaction was further determined by the ratio between globulin and albumin; the greater the amount of globulin present in the blood serum, the more strongly positive was the reaction. The reaction is not specific for malignant tumors. The positive reading depends on the presence of hydremia and on an increase in globulin. In the initial stages of cancer, when the diagnosis is of surgical importance, the blood changes are too slight to have any influence on the reaction. The Botelho reaction may possess some clinical value for the diagnosis of the general condition of the patient, since it reveals serum changes corresponding to cachexia and cell destruction. For differential diagnosis in surgery it is of little practical value.

Blood Circulation of Collapsed Lung in Experimental Pneumothorax.—Unilateral open pneumothorax caused arterial anoxemia in Weiss's experiments on rabbits, whereas unilateral closed pneumothorax seldom provoked this condition. Both open and closed pneumothorax induced anoxemia in dogs. There was a connection between arterial anoxemia and poor ventilation of the lung, which was shown in low alveolar oxygen tension and in rapid relief of the anoxemia on inspiration of oxygen. The circulation in the healthy and the collapsed lungs of rabbits was estimated from analyses of arterial blood from the carotid and of mixed venous blood from the right side of the heart obtained during inspiration of oxygen. The circulation in the collapsed lung was lower than in the healthy normal lung by as much as 12 per cent. The amount of blood passing through the collapsed lung in dogs with a closed pneumothorax was about 70 per cent of the normal.

Zentralblatt für Chirurgie, Leipzig

53: 3025-3088 (Nov. 27) 1926

Unsuccessful Operations for Ulcer. P. Riess.—p. 3026.
*Explosion with Oxygen-and-Ether Anesthesia. A. Beck.—p. 3028.
New Agglutination Test with Hemolized Blood. J. Clemens.—p. 3032.
Tendon Suture After Injuries. E. Baumann.—p. 3037.
Nature and Value of Botelho's Reaction. H. Hilarowicz.—p. 3038.
Echinococcus in the Pancreas. M. Kostić.—p. 3042.
Some Points of Philology in Surgery. H. Reinberg.—p. 3044.
Apparatus to Protect Wounds of the Back. H. Jessen.—p. 3045.
*Length of Amputation Stump. M. zur Verth.—p. 3046.

Explosion with Oxygen-and-Ether Anesthesia.—Beck's patient was anesthetized with a mixture of oxygen and ether under positive pressure. The ether was turned off and oxygen alone given. Some time after this, diathermy was applied for the purpose of cauterizing a fistula of the lung. A severe explosion occurred. The patient died an hour later, but since burns or injuries attributable to the accident could not be discovered at necropsy, it remained uncertain whether death was due to the operation alone or to the explosion. The accident may possibly be explained by ether fumes, having their source in the walls of the tubes or in the rubber bag, which became mixed with the oxygen in quantities sufficient to cause explosion. The time allowed between turning off the ether and starting the diathermy may not have been long enough. In experiments with animals, Beck found that, whereas the oxygen-and-ether mixture in ordinary use as an anesthetic is a highly explosive gas, there is scarcely any risk of explosion with a corresponding mixture of air and ether. The thermocautery should not be used with oxygen-and-ether anesthesia. With the ether drop the danger is much less. Compressed air is preferable to compressed oxygen for positive pressure anesthesia in these conditions.

Thigh Amputation from the Standpoint of the Artificial Limb.—Verth protests against the long Gritti stump. If the knee joint of the artificial limb is not to be lower than that in the other limb, the stump must be from 6 to 8 cm. shorter than the thigh on the well side.

Profilakticheskaya Meditsina, Kharkov

5: 1-174 (Nov.) 1926. Partial Index

*Influence of Vaccination in Preventing Puerperal Infection. E. Y. Yankelevich.—p. 19.
Study of Trachoma Epidemics. A. I. Antonovskiy.—p. 25.

Influence of Vaccination in Prevention of Puerperal Infection.—Vaccine treatment was applied by Yankelevich to 300 pregnant women. The vaccine was prepared with cultures of streptococci and staphylococci isolated from patients with a fatal form of puerperal infection, mixed with cultures of streptococci from surgical patients. In the course of pregnancy, one hundred millions of streptococci and two hundred millions of staphylococci were injected intramuscularly twenty days before the presumed date of childbirth; a double dose of the vaccine was injected ten days later. A general reaction was observed in 60 per cent of the women, a local reaction in all. At the end of pregnancy, twenty-five millions of streptococci and two hundred millions of staphylococci were injected. Two days later, the injection was repeated, the dose of streptococci being doubled. After another two days, a third injection was given containing four times the initial dose of streptococci and twice the initial dose of staphylococci. Rarely a slight general reaction was noted after the second or third injection, the local reaction was mild. The vaccination did not affect the kidneys, at least when there was not a grave form of nephritis or nephrosis already existent. While puerperal infection occurred in about 30 per cent of nonvaccinated women, and in 24 per cent of those who had received one injection, it was observed in less than 6 per cent of those who had had two or three injections. In the vaccinated the infection was always in an attenuated form. The percentage of puerperal infection would probably decrease still further if colon bacillus or, sometimes, gonococcus vaccine were added.

Acta Radiologica, Stockholm

5: 475-574 (Dec. 15) 1926

Primary Chondroma of the Lung. P. M. Hickey and W. M. Simpson.—p. 475. In English.
Postoperative Irradiation Treatment of Malignant Tumors. L. Halberstaedter and H. Simons.—p. 501.
*Roentgenologic Skeletal Changes in Gaucher's Disease. S. Junghagen.—p. 506.
Photo-Activity of Antirachitic Oils. E. Rekling.—p. 517. In English.
Transparency of Skin to Light. W. Stenström and M. Reinhard.—p. 553. In English.
*Reinforcement of Roentgen-Ray Action by Dextrose Injections. G. Holzknecht.—p. 561.
Fixation of the Head in Skiagraphy. H. Odqvist.—p. 565. In English.
Iris Type Diaphragm in Roentgen-Ray Diagnosis. A. Lundqvist.—p. 571.

Roentgenologic Skeletal Changes in Gaucher's Disease.—Junghagen reports the case of a girl, aged 3, who presented roentgenologically two small fissures in the spleen. The abdomen was markedly enlarged and she had previously been suffering from constipation and vomiting. There were not any signs of jaundice. Splenectomy was performed and on histologic examination idiopathic large cell splenomegalia of Gaucher's type was found. The following skeletal observations were made in the roentgenogram: (1) There was marked general deficiency of calcium (atrophy); (2) the spongy tissue was of coarsely porous, trabeculated structure; (3) there was destruction of spongy tissue, either in small, well defined areas, giving to the bone a worm-eaten appearance, or in large areas, leading to more extensive defects; (4) cartilage and periosteum remained for the most part roentgenologically unchanged. Excellent illustrations accompany the article.

Reinforcement of Roentgen-Ray Action by Intravenous Injection of Dextrose.—On the basis of his own observations and those of others, Holzknecht reviews the effect of a preliminary intravenous injection of dextrose, by E. G. Mayer's method, on the sensitiveness of cancer to the roentgen ray. A greater number of cases are benefited by the rays and maximum results are quickly obtained as a result of dextrose injections. Other means that have been tried to increase the sensitiveness of cancer tissue to the rays have not had any effect worth mentioning.